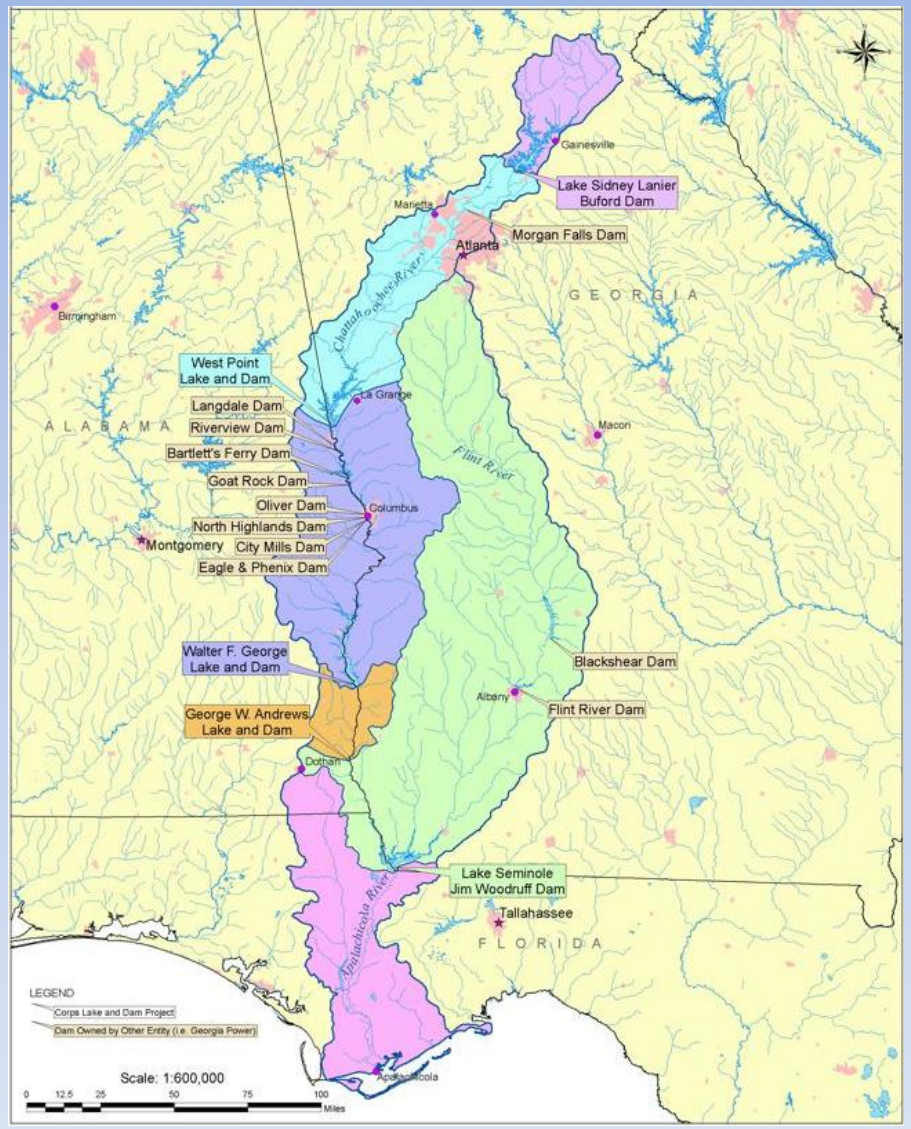
National Integrated Drought Information System

Southeast US Pilot for Apalachicola-Flint-Chattahoochee River Basin

7 February 2012



Current drought status from Drought Monitor

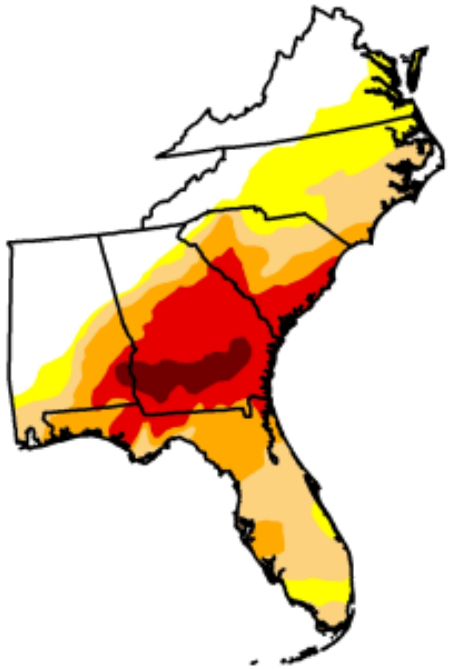
U.S. Drought Monitor

January 31, 2012
Valid 7 a.m. EST

Southeast

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	27.29	72.71	55.82	35.78	20.34	3.71
Last Week (01/24/2012 map)	30.52	69.48	54.04	32.17	19.37	1.22
3 Months Ago (11/01/2011 map)	41.84	58.16	44.93	32.80	21.45	0.00
Start of Calendar Year (12/27/2011 map)	40.38	59.62	43.05	28.62	18.71	0.00
Start of Water Year (09/27/2011 map)	42.24	57.76	41.82	31.77	23.48	0.00
One Year Ago (01/25/2011 map)	8.50	91.50	66.38	24.17	5.78	0.00



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://droughtmonitor.unl.edu

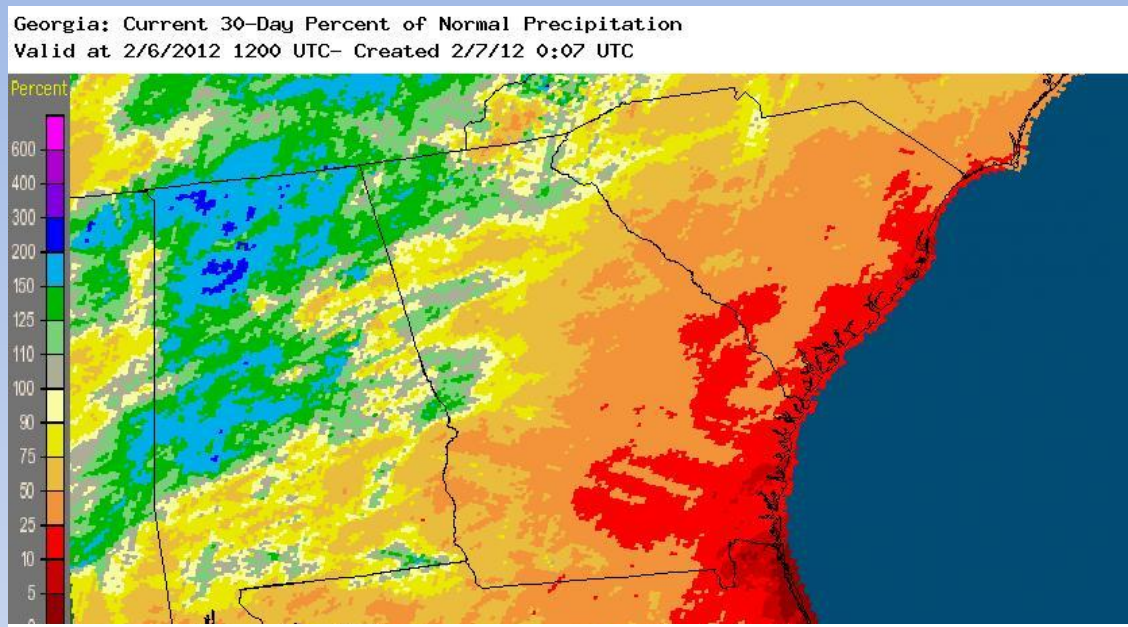
USDA National Drought Mitigation Center

Released Thursday, February 2, 2012
Eric Luebehusen, USDA

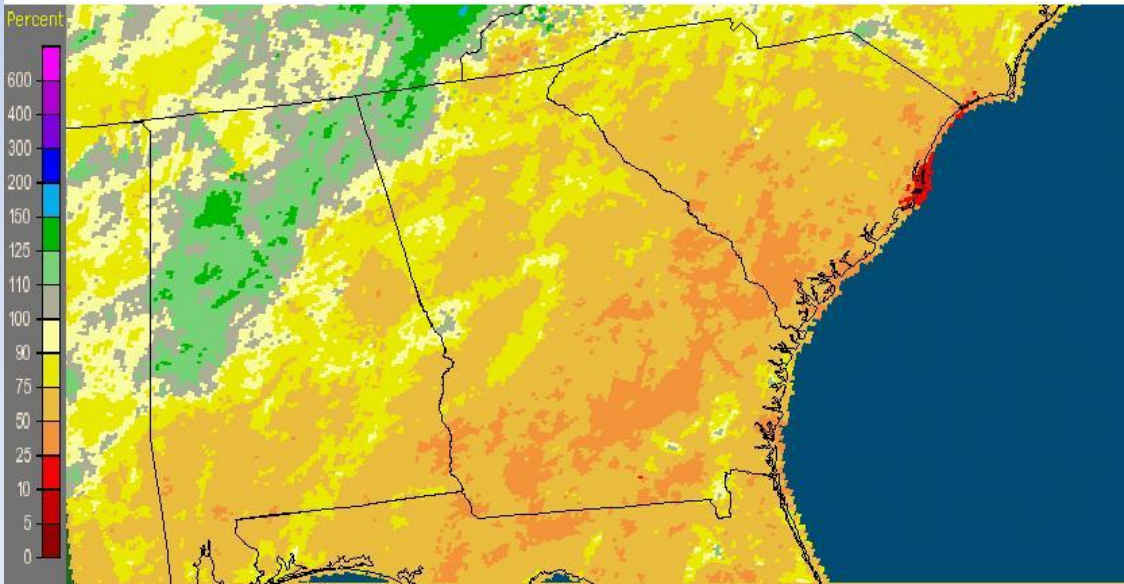
http://www.drought.unl.edu/dm/monitor.html

Cumulative Rainfall Deficits

Past 30 days

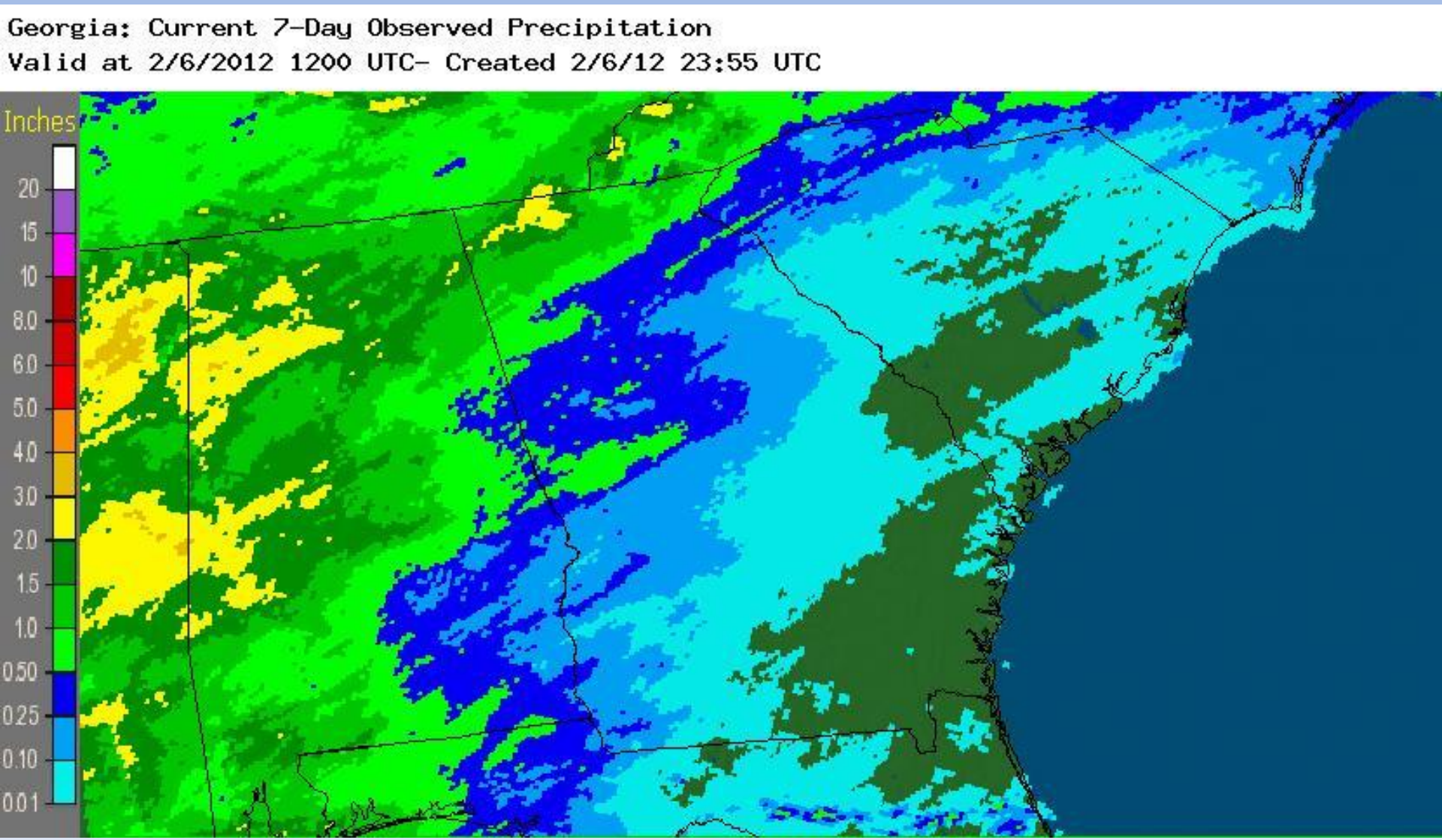


Past 180 days



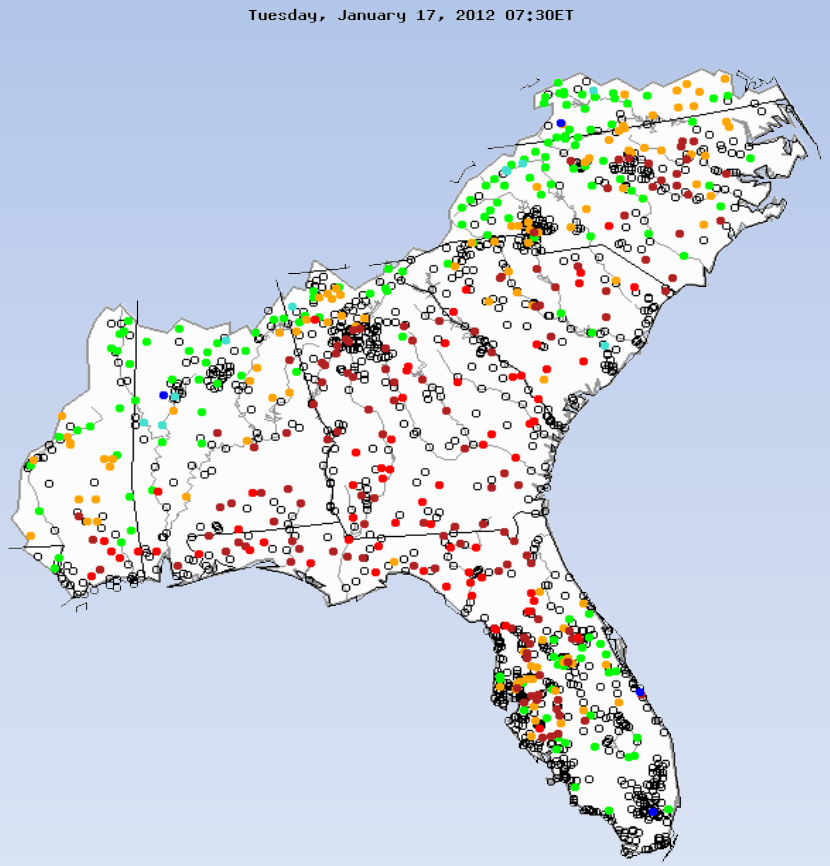
http://water.weather.gov/precip/

7-day Rainfall Totals

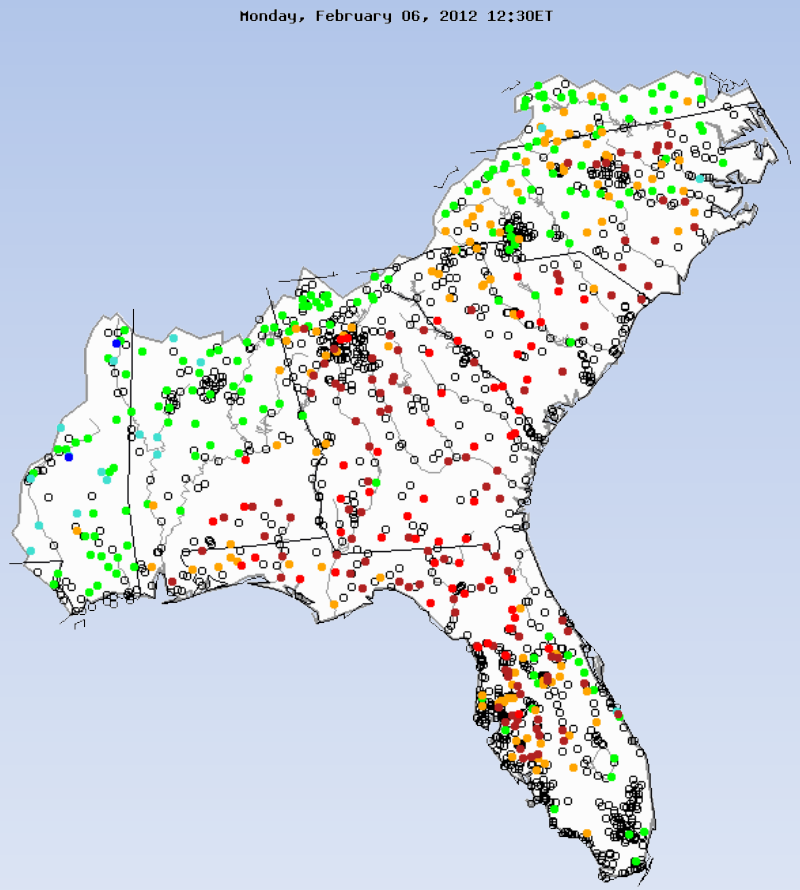


Realtime stream flow compared with historical monthly averages

Previous Month:



Current:



USGS

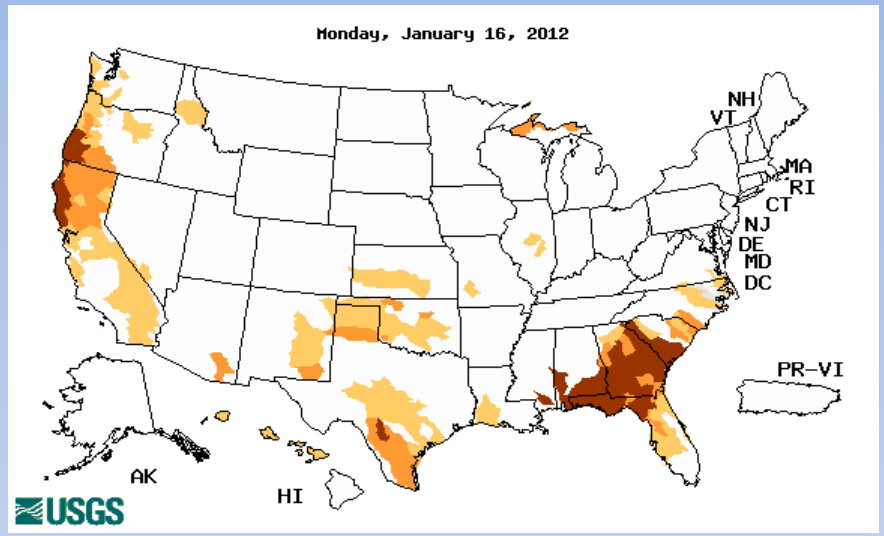
USGS

http://waterwatch.usgs.gov

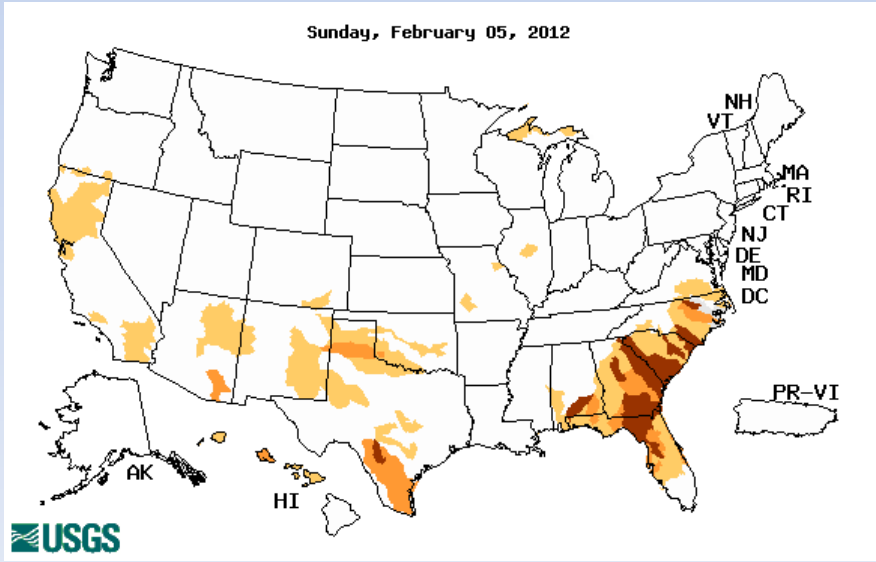
Below Normal 7-day Average Streamflows

Previous month:

Below normal 7-day average streamflow as compared with historical streamflow for day shown



Current:



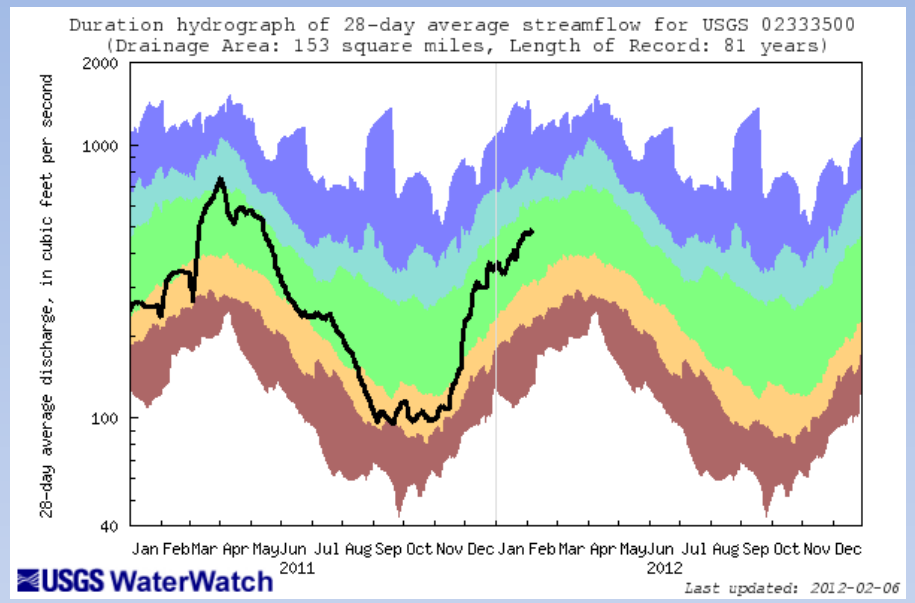
http://waterwatch.usgs.gov

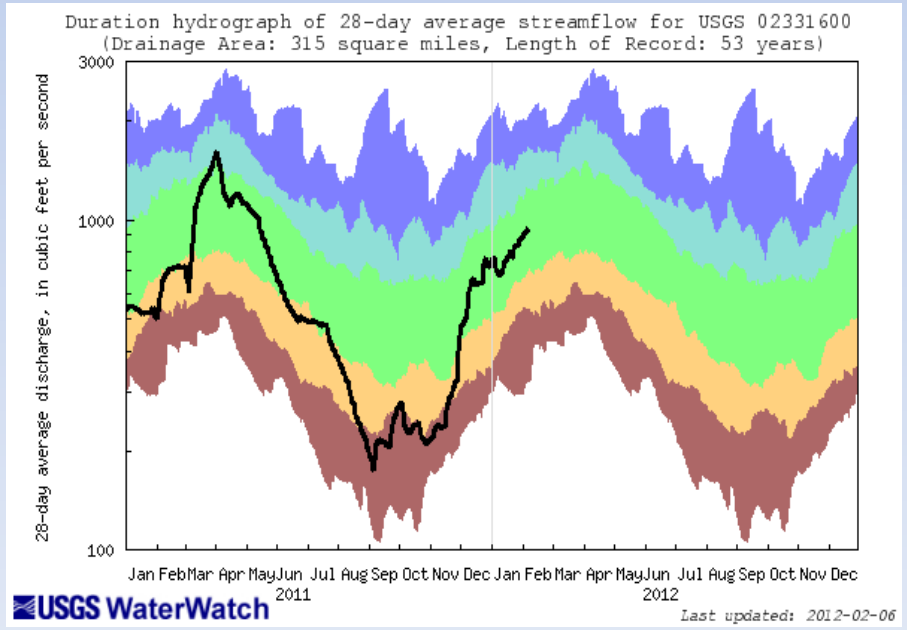
Lake Lanier Inflows

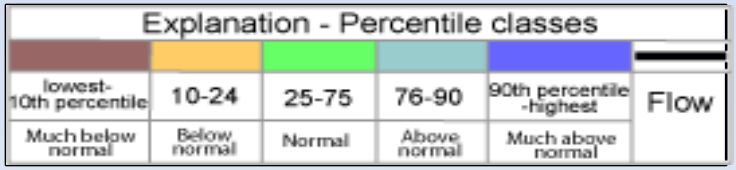
Chestatee near Dahlonega (02333500)

http://waterwatch.usgs.gov

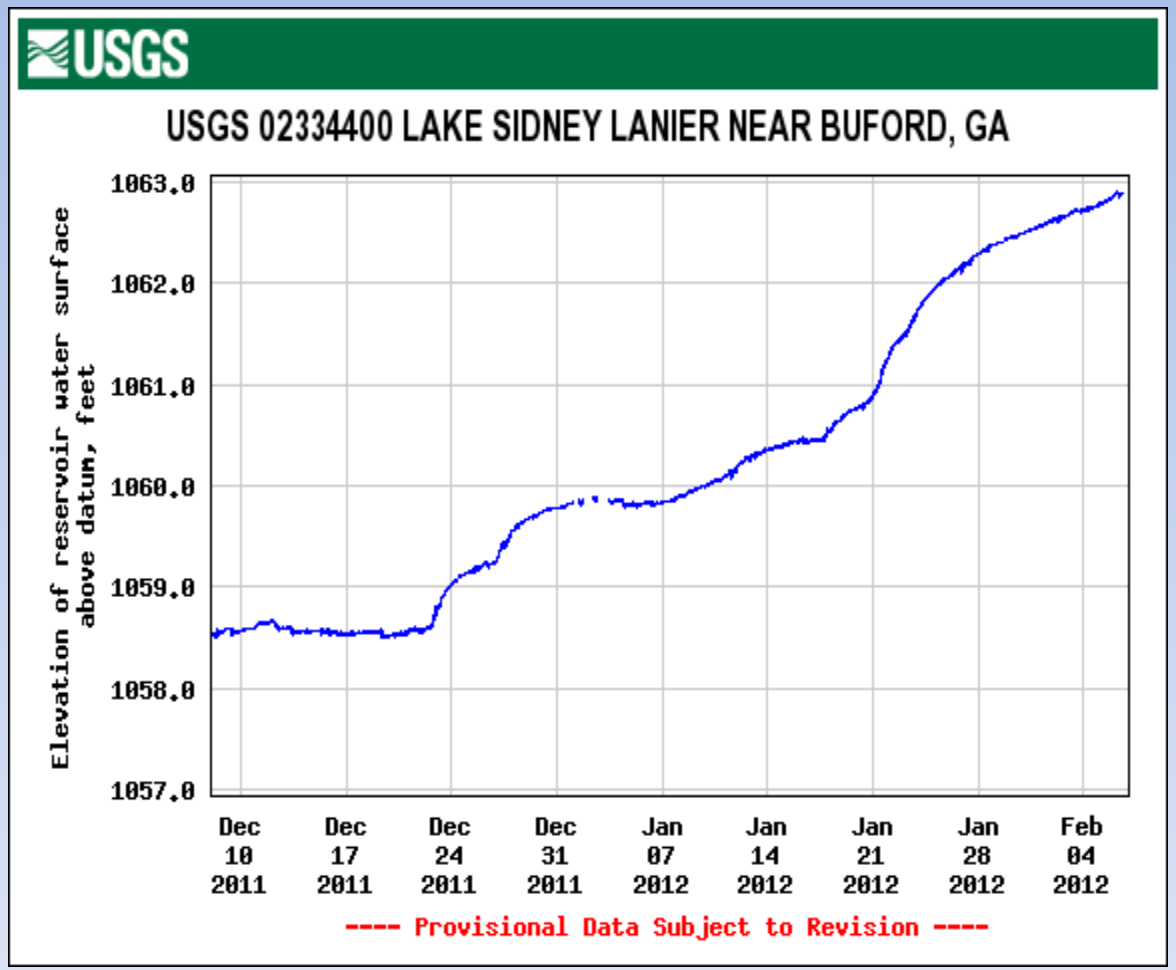
Chattahoochee near Cornelia (02331600)





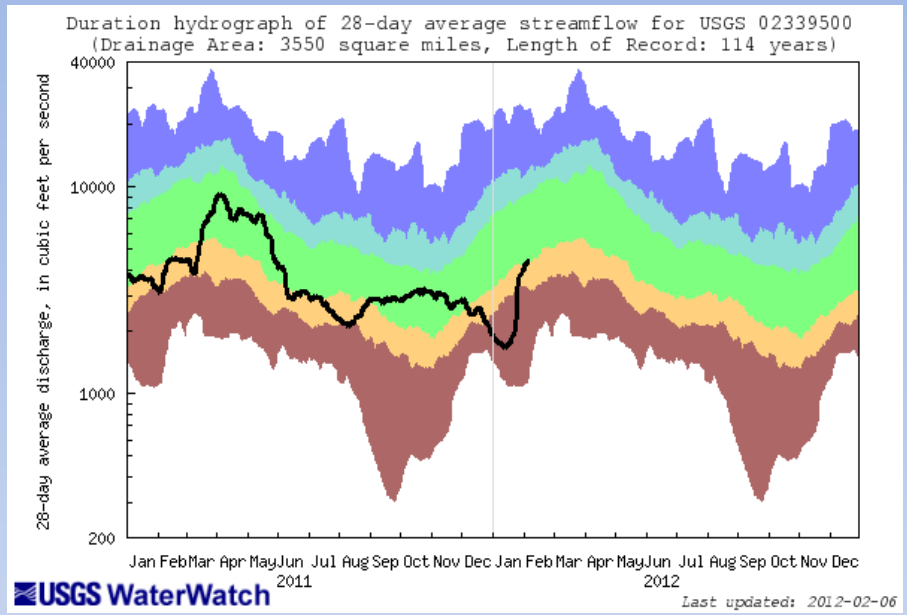


Lake Lanier Levels (02334400) for Previous 60 Days



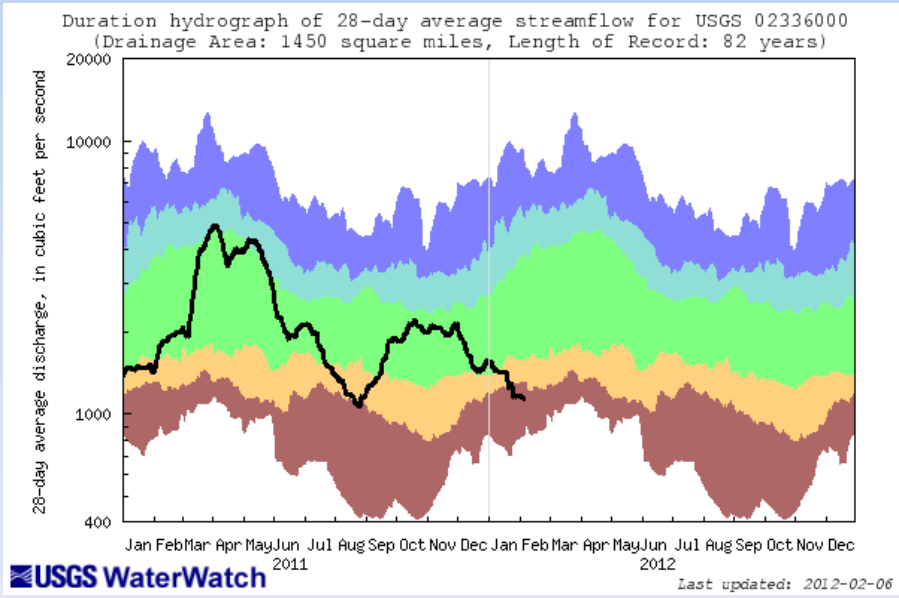
Current Streamflows

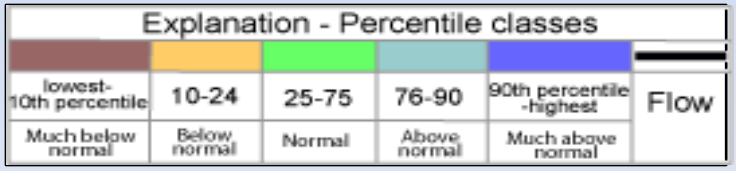
Chattahoochee at West Point (02339500)



http://waterwatch.usgs.gov

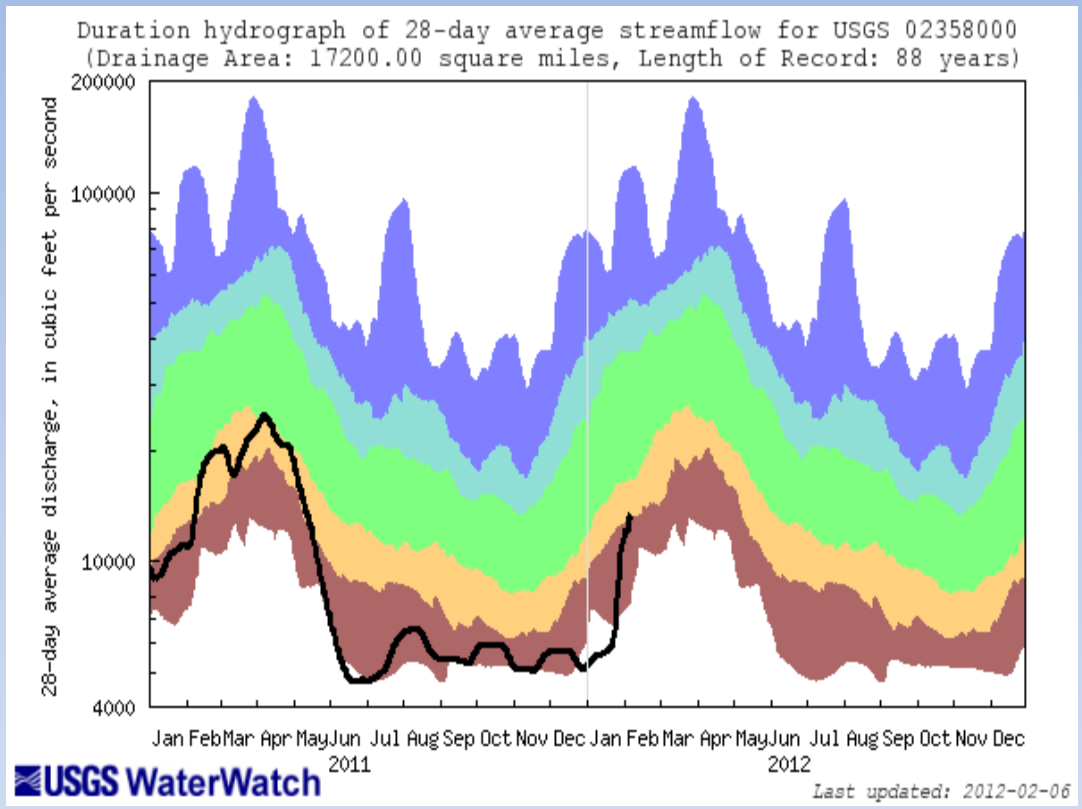
Flint at Bainbridge (02356000)

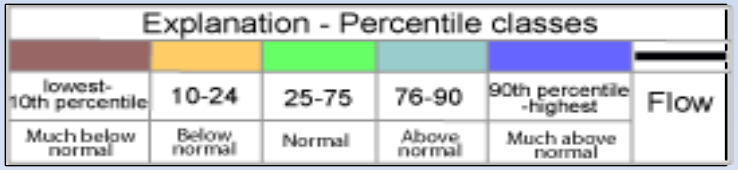




Streamflows

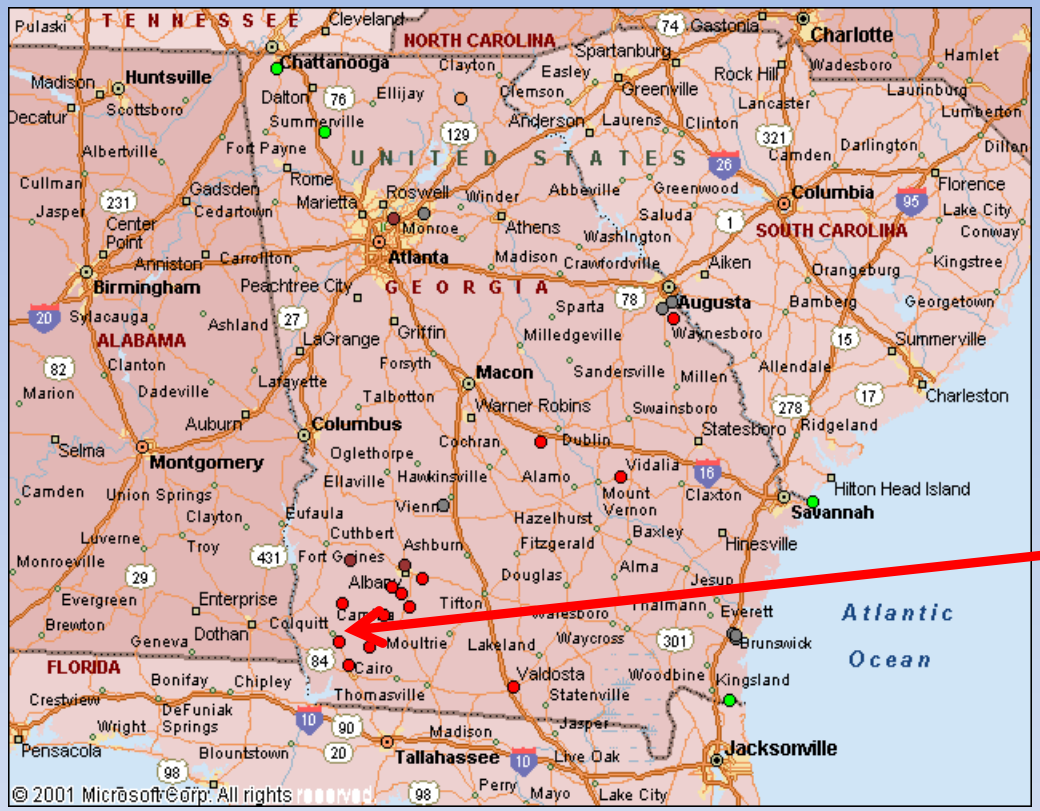
Apalachicola at Chattahoochee (02358000)

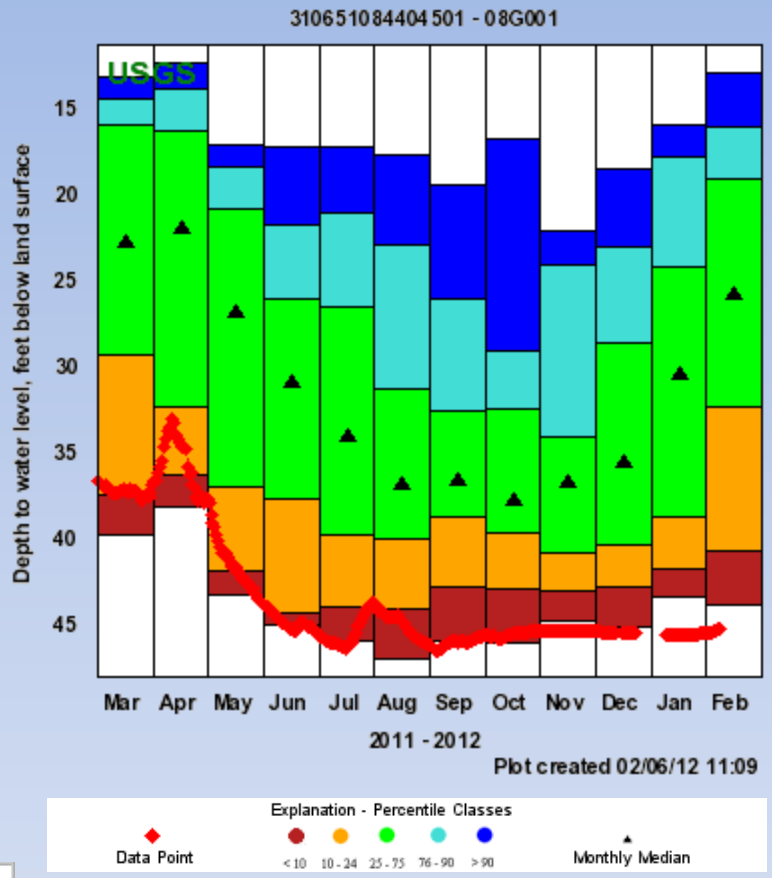


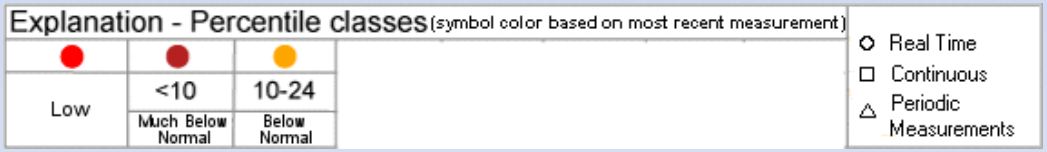


http://waterwatch.usgs.gov

Groundwater Status

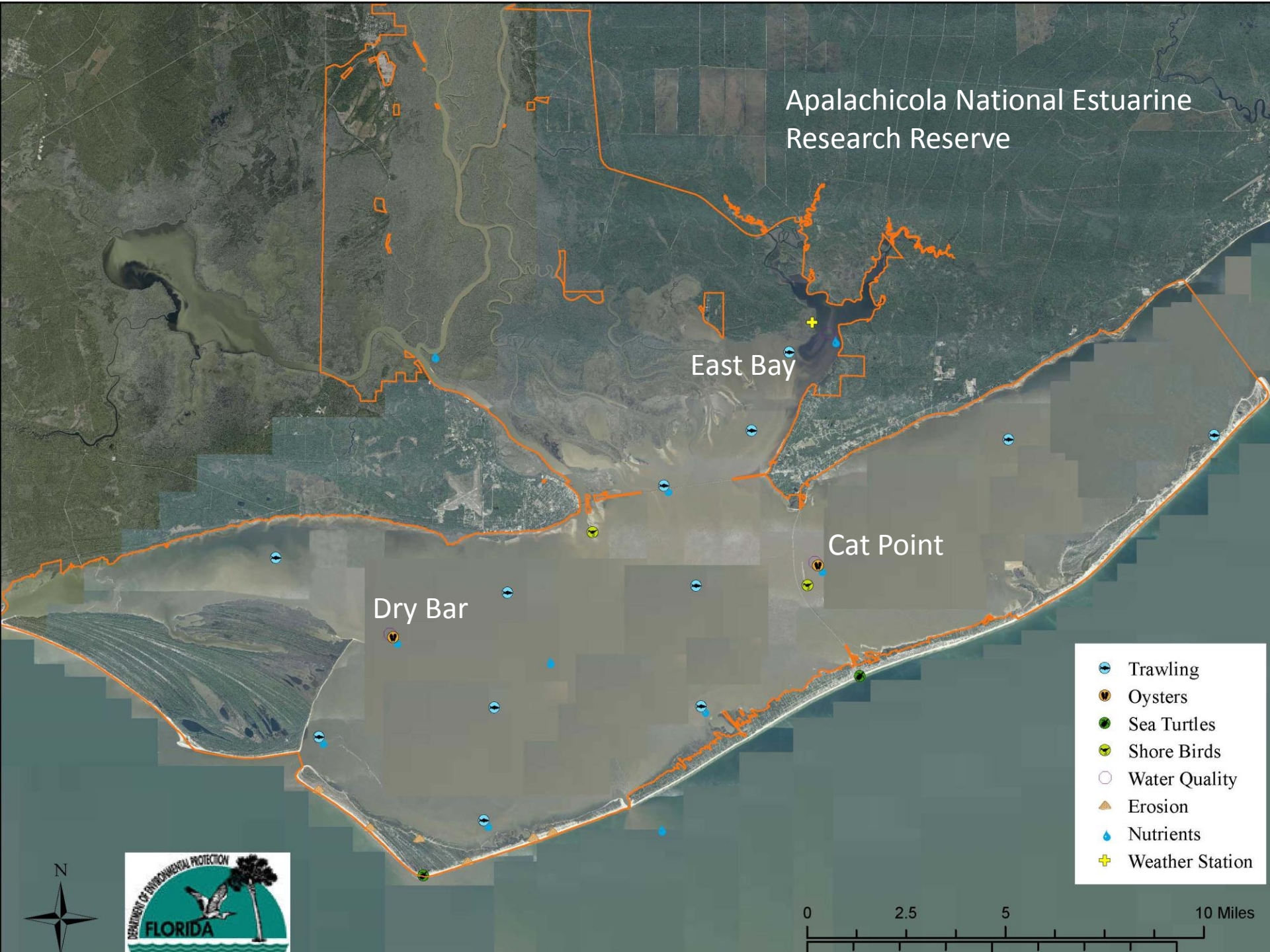




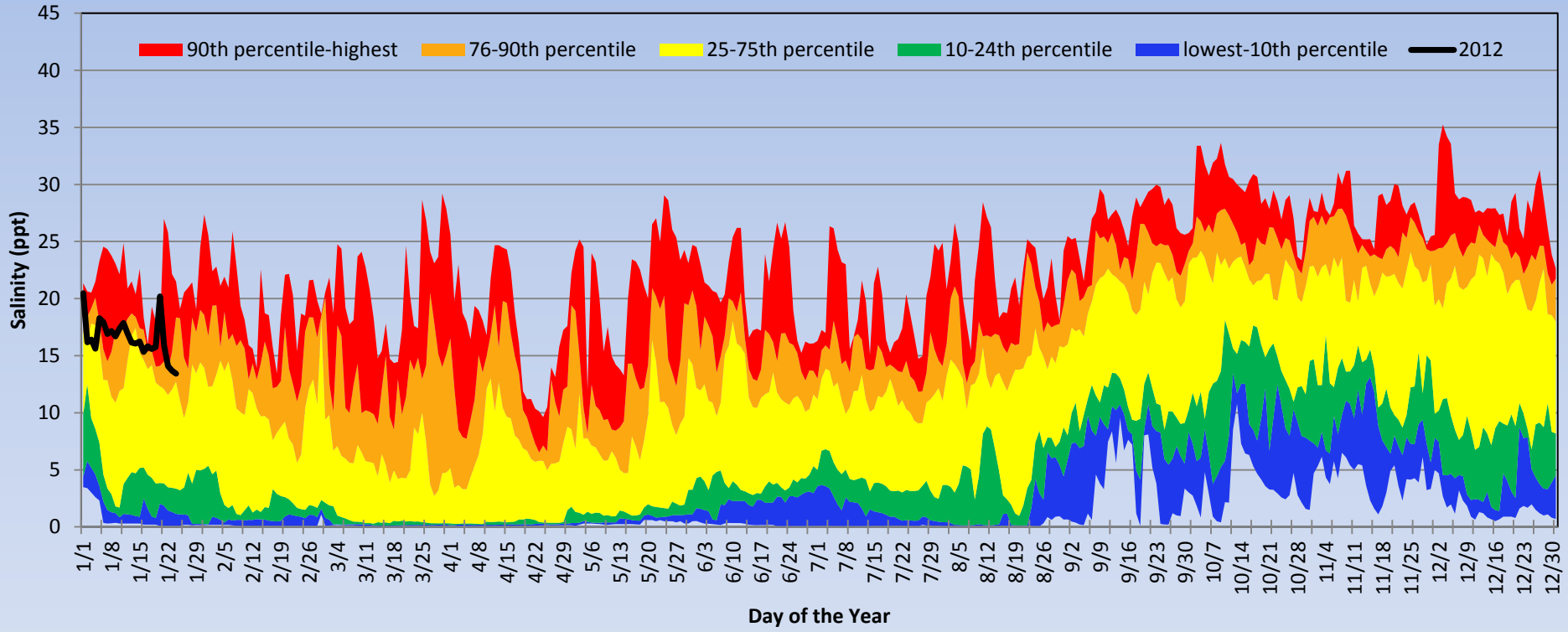


Miller County, GA
(Upper Floridan Aquifer)

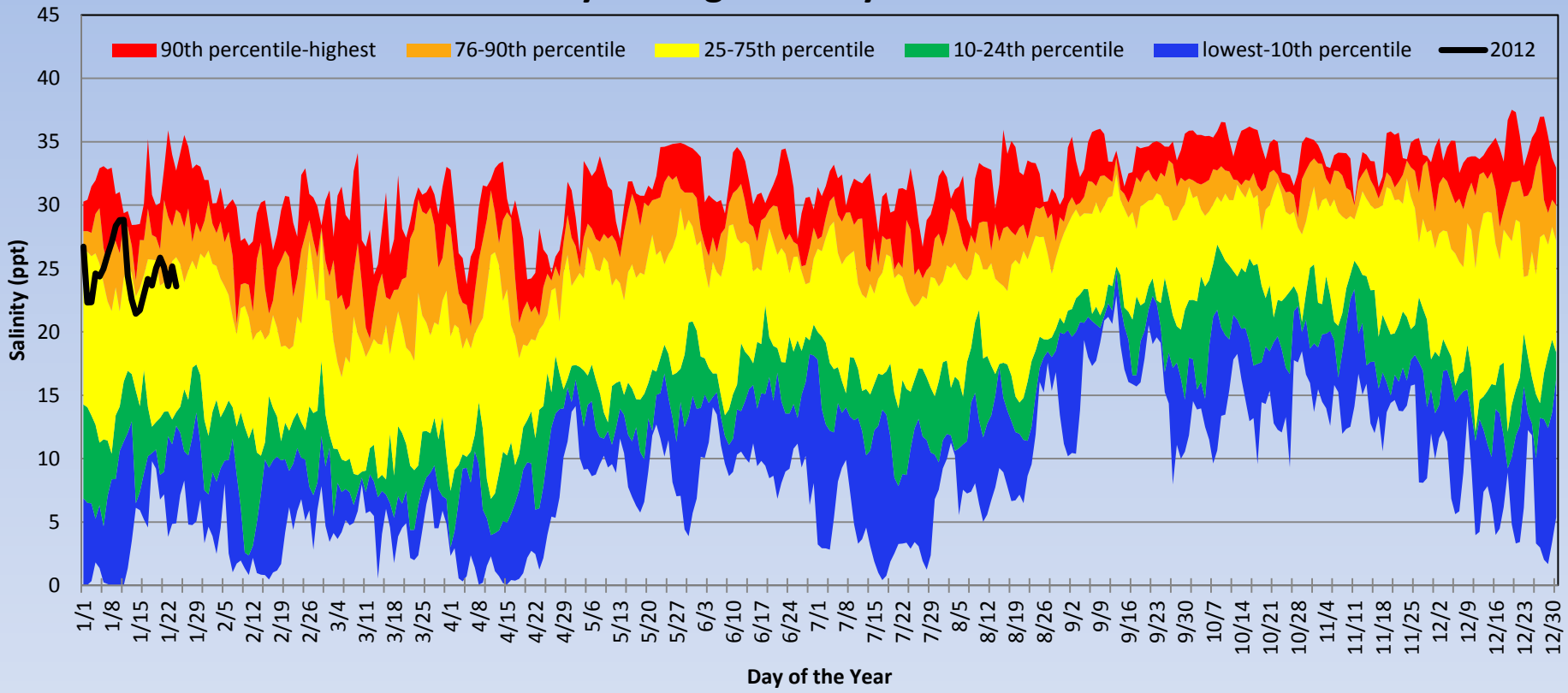
http://groundwaterwatch.usgs.gov


Apalachicola National Estuarine Research Reserve
East Bay
Cat Point
Dry Bar
Trawling
Oysters
Sea Turtles
Shore Birds
Water Quality
Erosion
Nutrients
Weather Station
N
FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
0
2.5
5
10 Miles

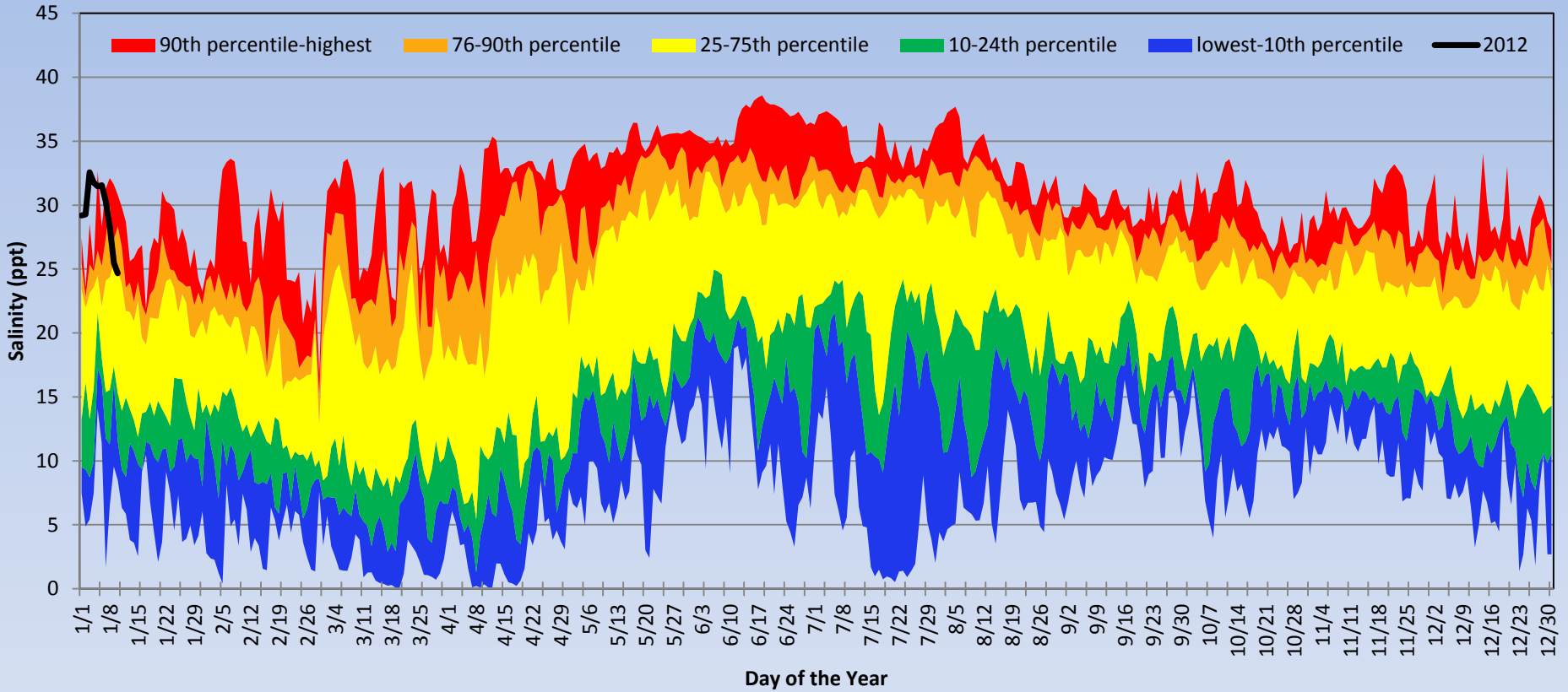
Daily Average Salinity at East Bay Bottom



Daily Average Salinity at Cat Point



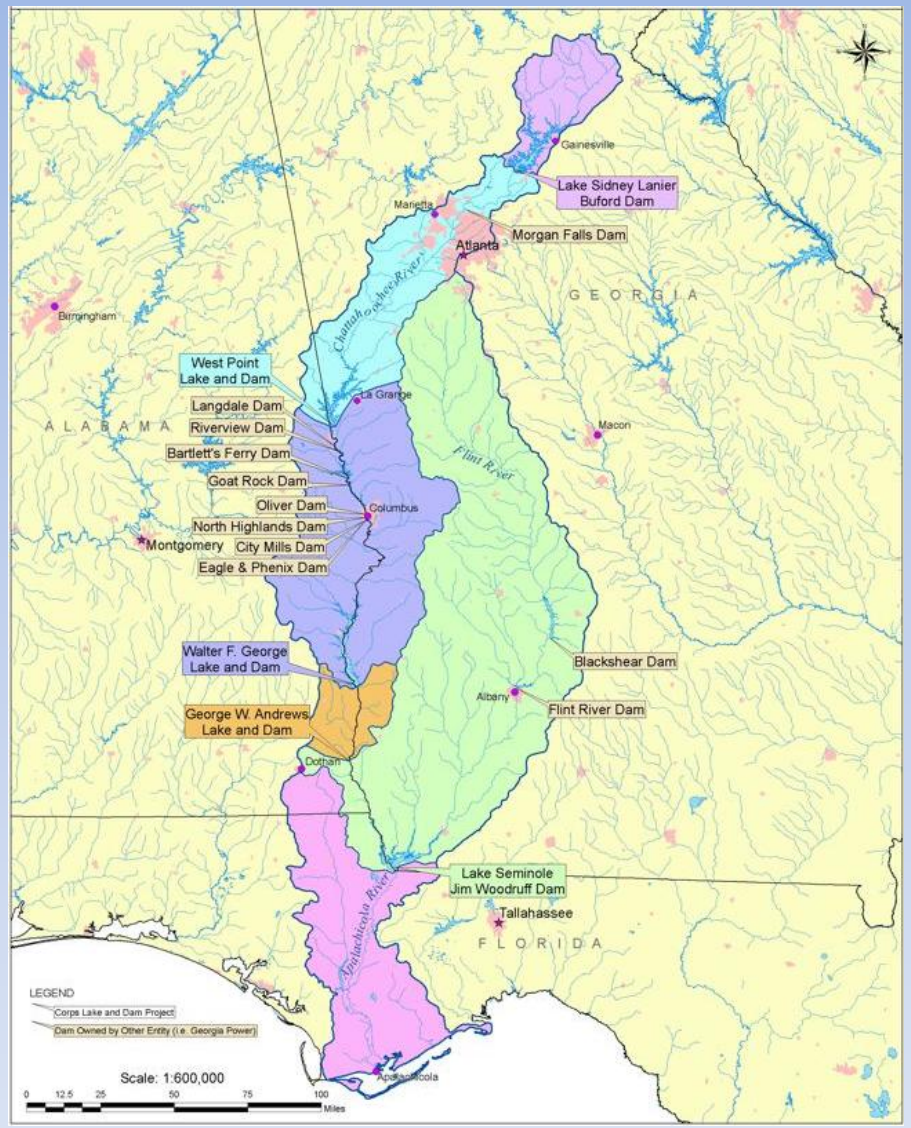
Daily Average Salinity at Dry Bar



USACE – ACF Reservoir Forecasts

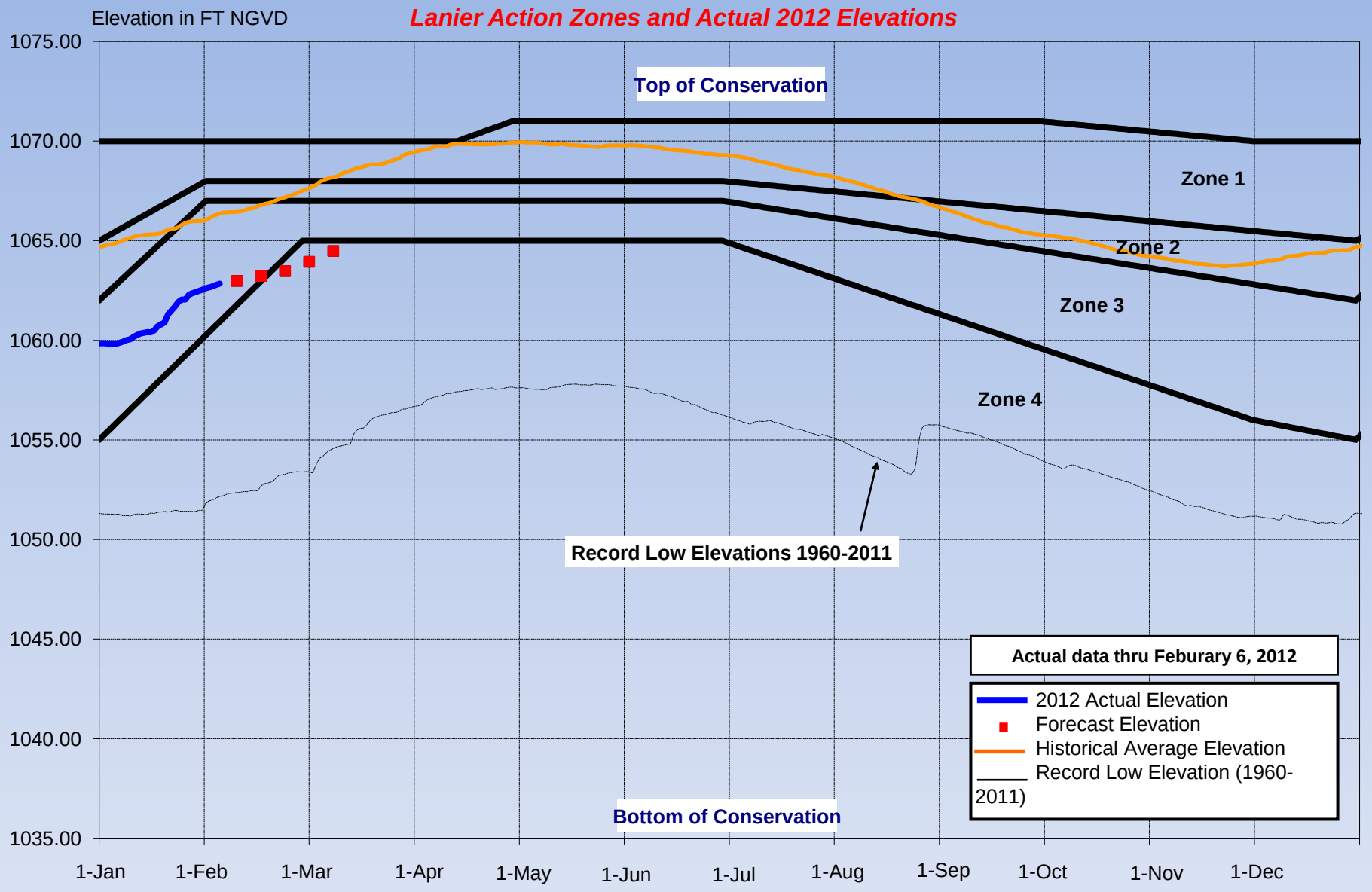
Water Management

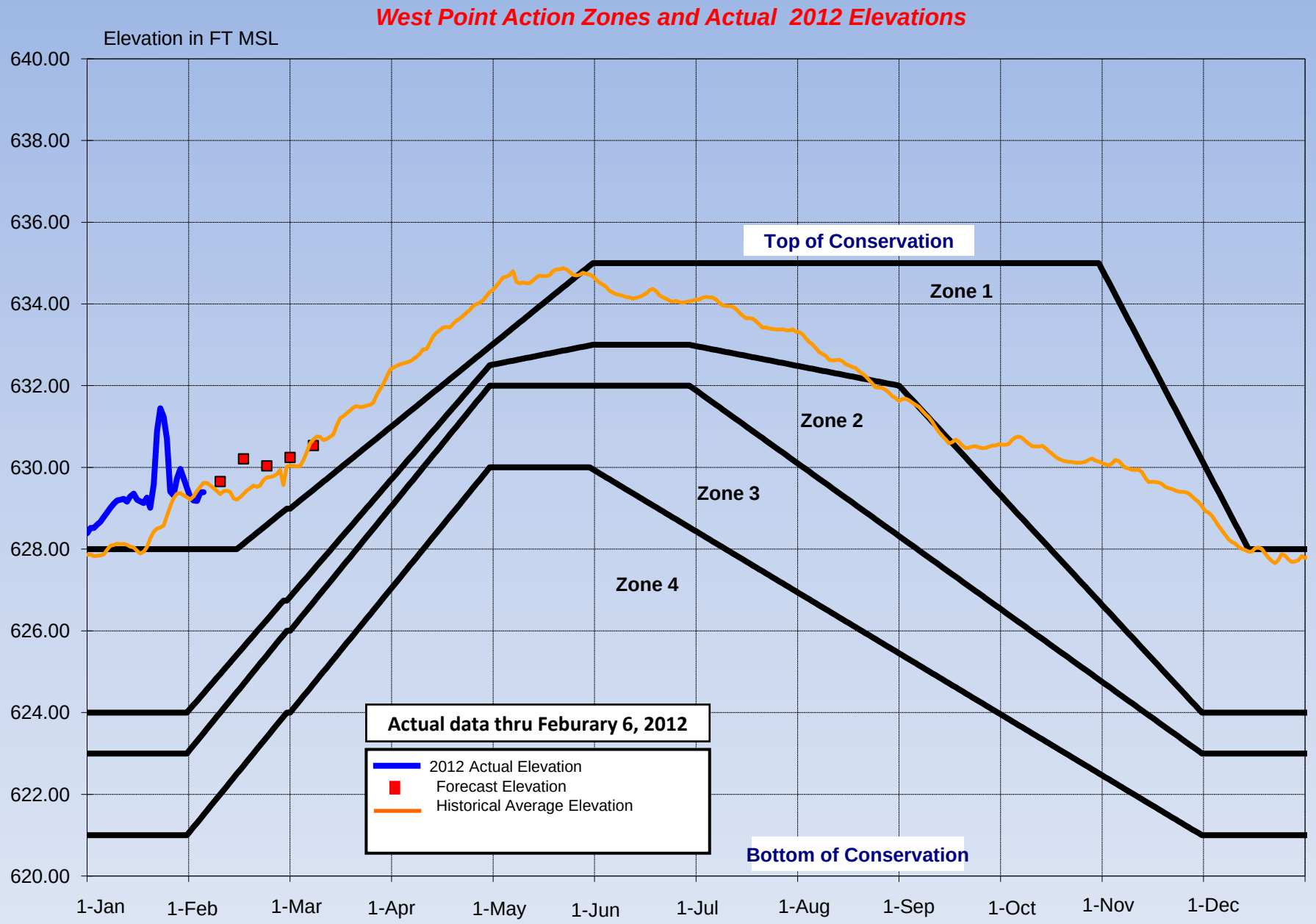
USACE, Mobile District

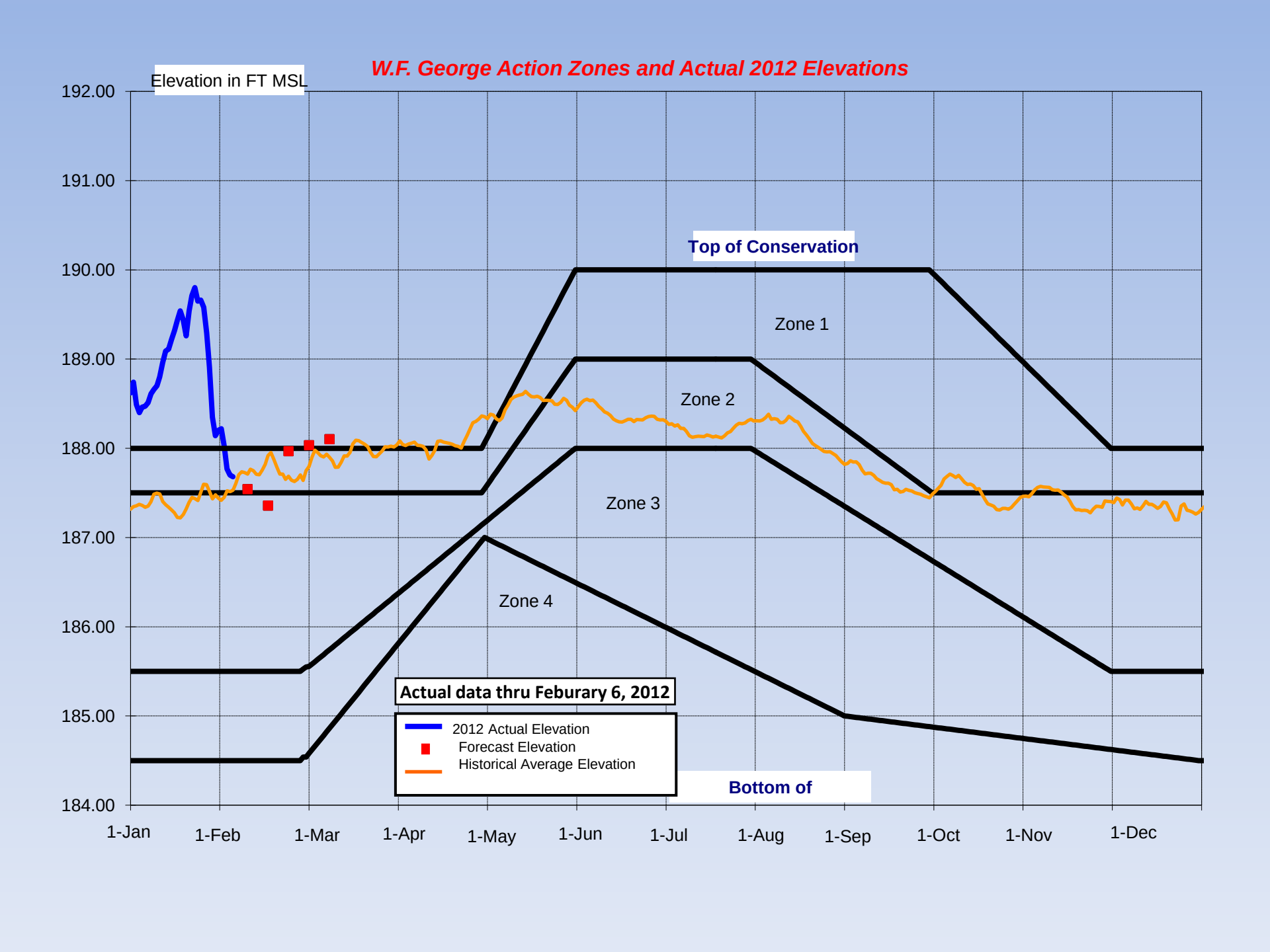


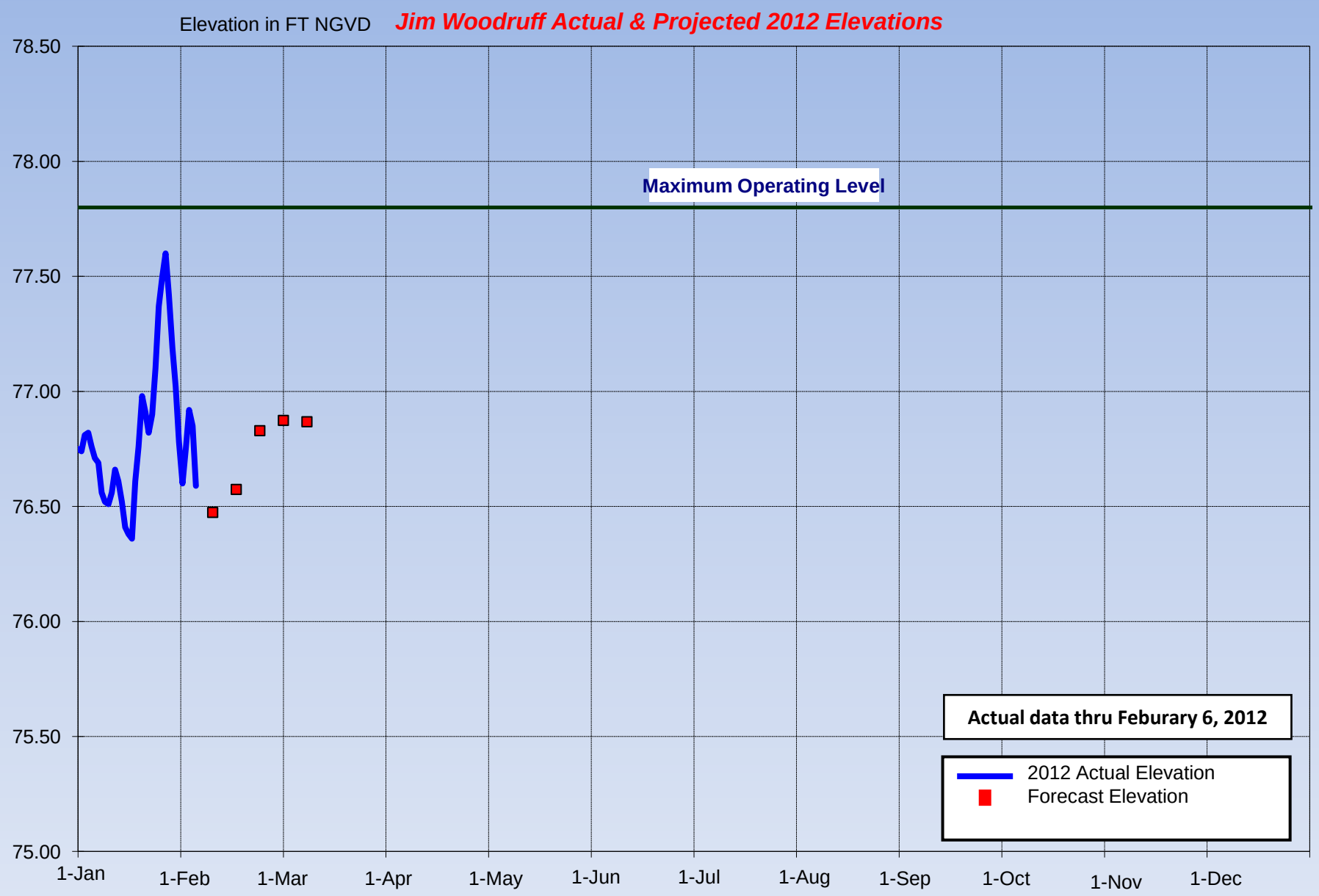
NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM

HYDROLOGY & HYDRAULICS
MOBILE DISTRICT

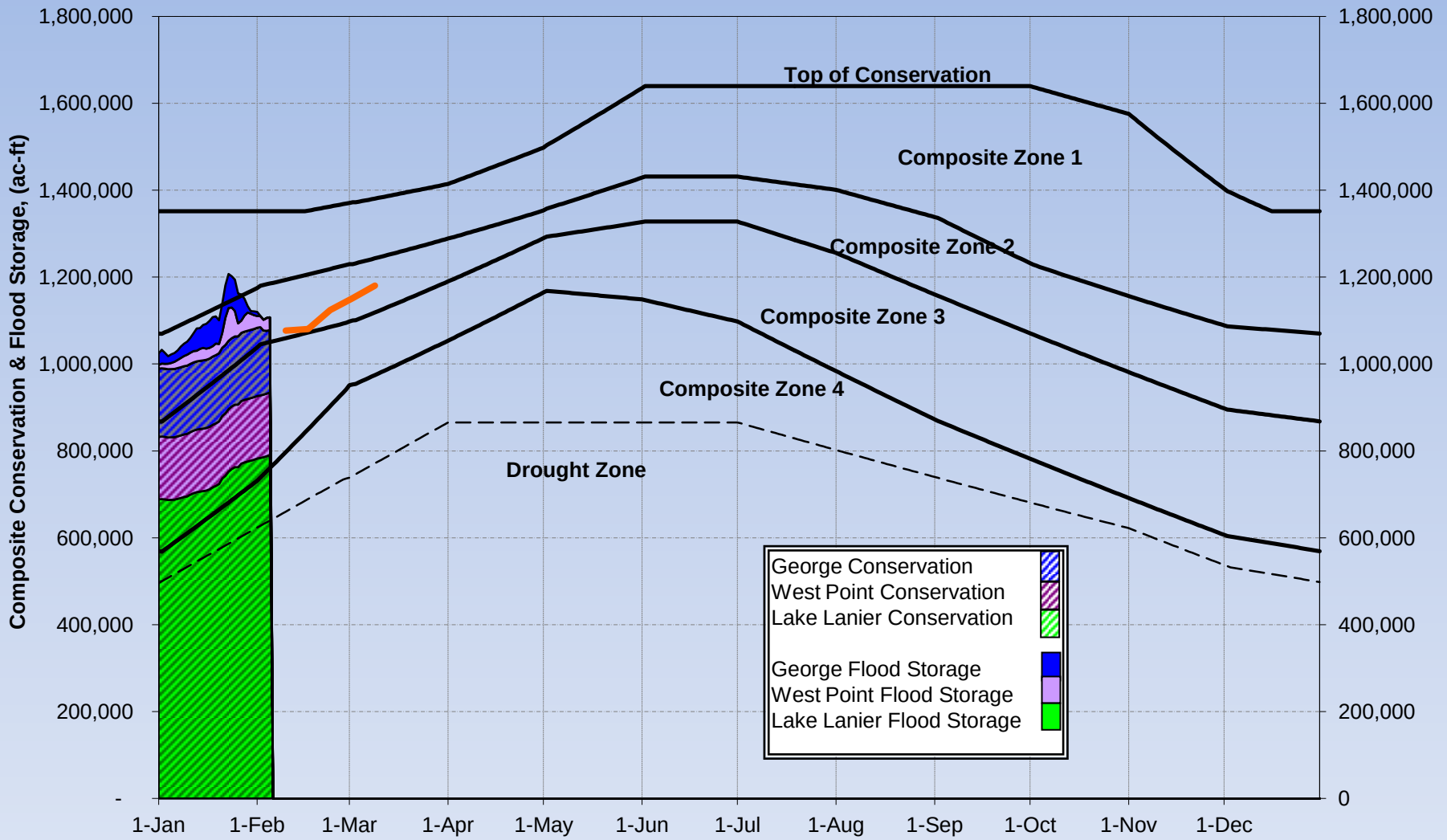

Elevation in FT NGVD
Lanier Action Zones and Actual 2012 Elevations
1075.00
1070.00
1065.00
1060.00
1055.00
1050.00
1045.00
1040.00
1035.00
Top of Conservation
Zone 1
Zone 2
Zone 3
Zone 4
Record Low Elevations 1960-2011
Bottom of Conservation
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Actual data thru Feburary 6, 2012
2012 Actual Elevation
Forecast Elevation
Historical Average Elevation
Record Low Elevation (1960-2011)


West Point Action Zones and Actual 2012 Elevations
Elevation in FT MSL
640.00
638.00
636.00
634.00
632.00
630.00
628.00
626.00
624.00
622.00
620.00
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Top of Conservation
Zone 1
Zone 2
Zone 3
Zone 4
Bottom of Conservation
Actual data thru Feburary 6, 2012
2012 Actual Elevation
Forecast Elevation
Historical Average Elevation


W.F. George Action Zones and Actual 2012 Elevations
Elevation in FT MSL
192.00
191.00
190.00
189.00
188.00
187.00
186.00
185.00
184.00
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Top of Conservation
Zone 1
Zone 2
Zone 3
Zone 4
Bottom of
Actual data thru Feburary 6, 2012
2012 Actual Elevation
Forecast Elevation
Historical Average Elevation


Elevation in FT NGVD
Jim Woodruff Actual & Projected 2012 Elevations
78.50
78.00
77.50
77.00
76.50
76.00
75.50
75.00
Maximum Operating Level
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Actual data thru Feburary 6, 2012
2012 Actual Elevation
Forecast Elevation

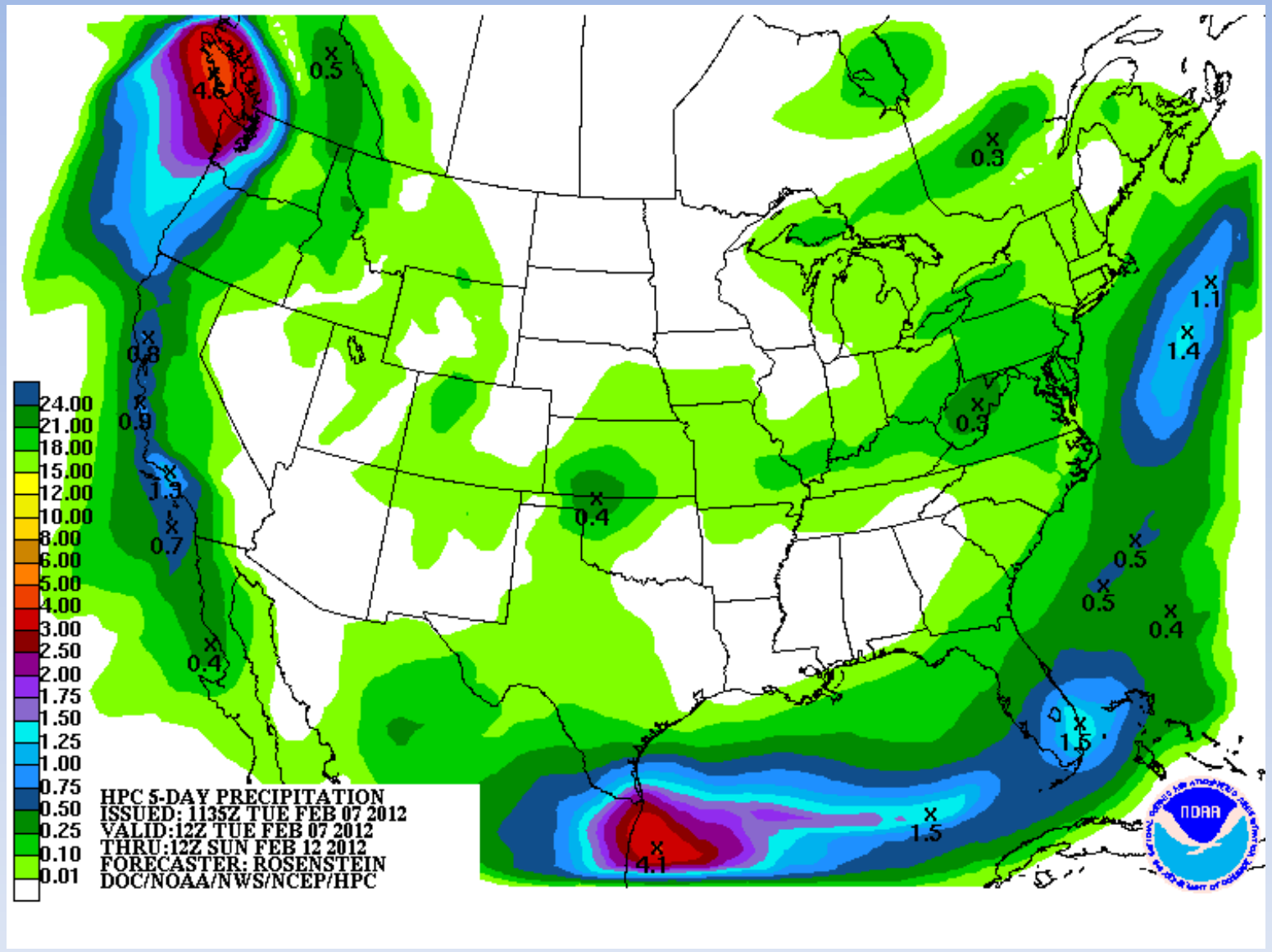
2012 ACF Basin Composite Conservation & Flood Storage



Actual data through 2-05-2012

Add value of 1,856,000 acre-ft to include inactive storage.

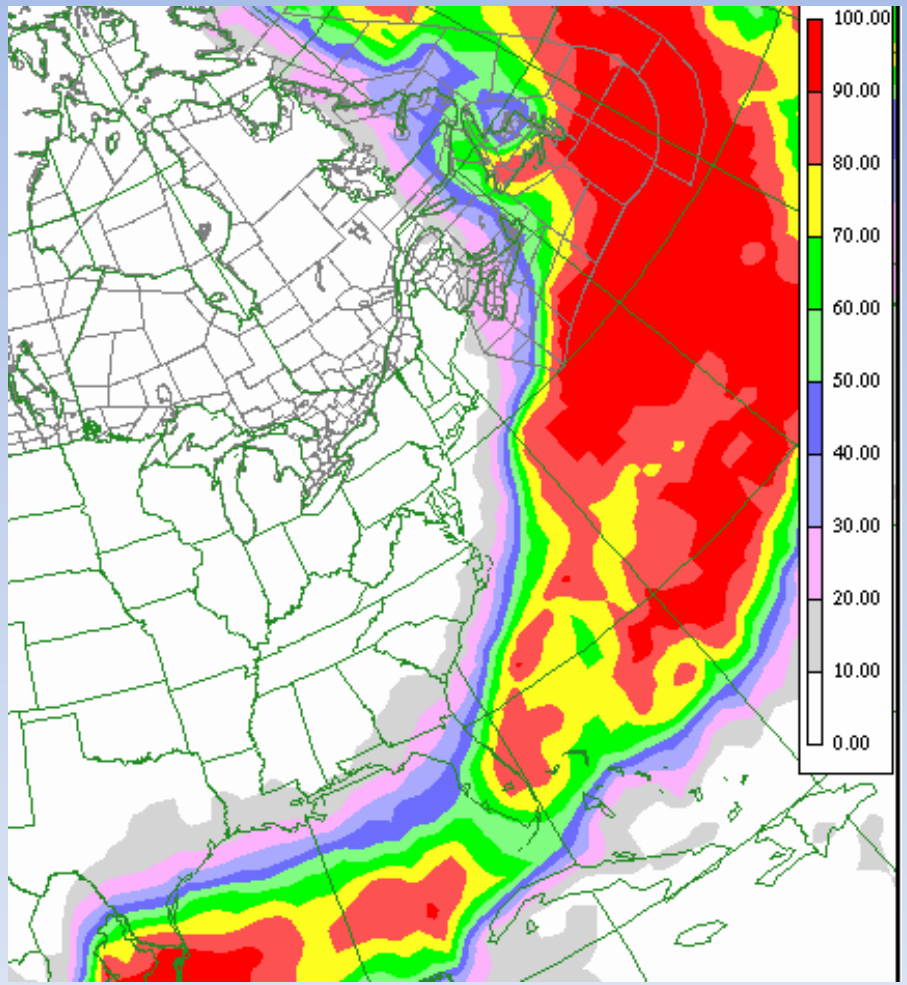
5-Day Precipitation Forecast



http://www.hpc.ncep.noaa.gov/qpf/day1-5.shtml

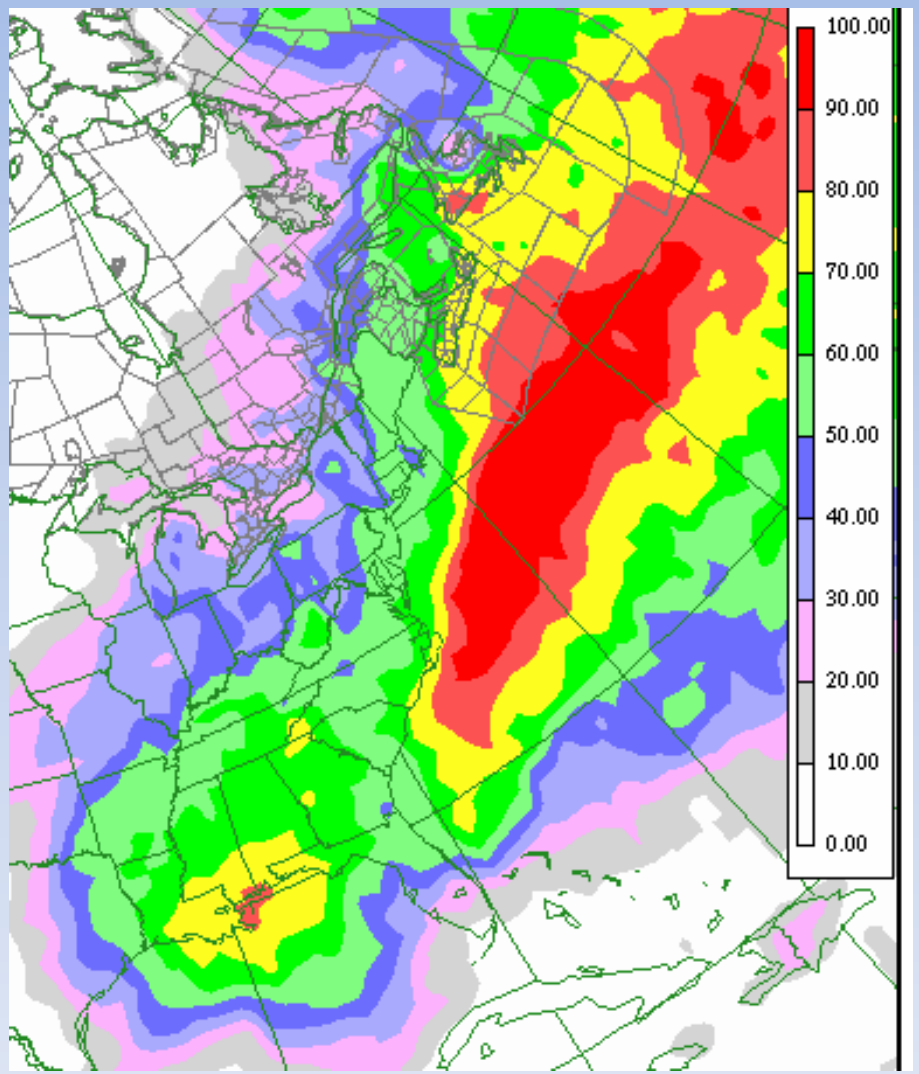
Week one precipitation probability

This image shows the probability of receiving at least 1 inch (25 mm) of rain during the 1-week period starting on February 7. The ACF has less than 30% probability of getting this much rain.



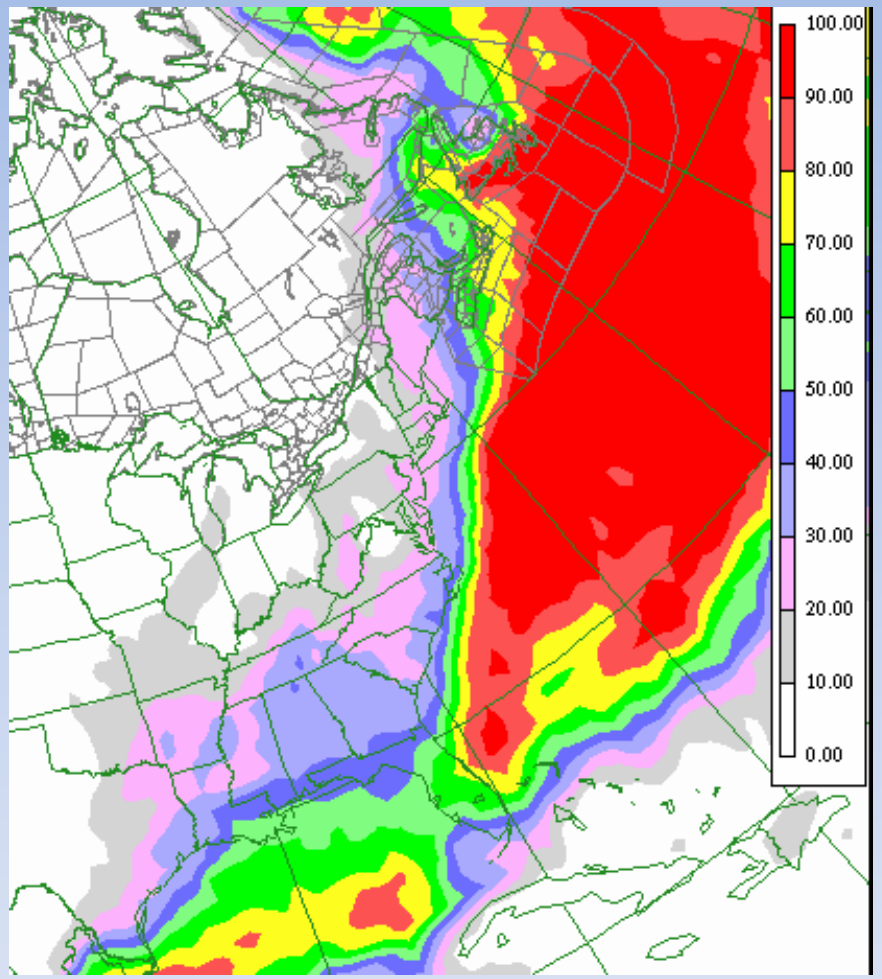
Week two precipitation probability

This image shows the probability of receiving at least 1 inch (25 mm) of rain during the 1-week period starting on February 14. The ACF has less a 60 to 80% probability of getting this much rain.

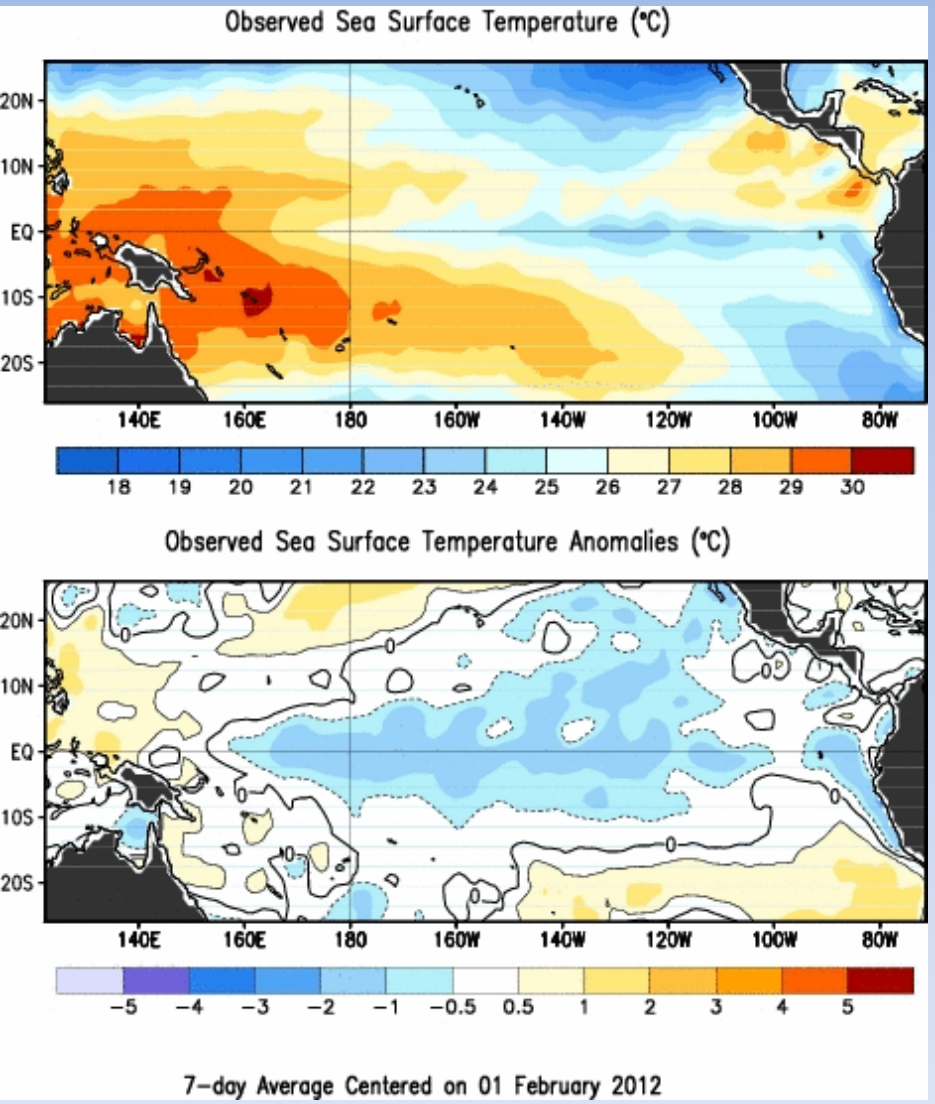


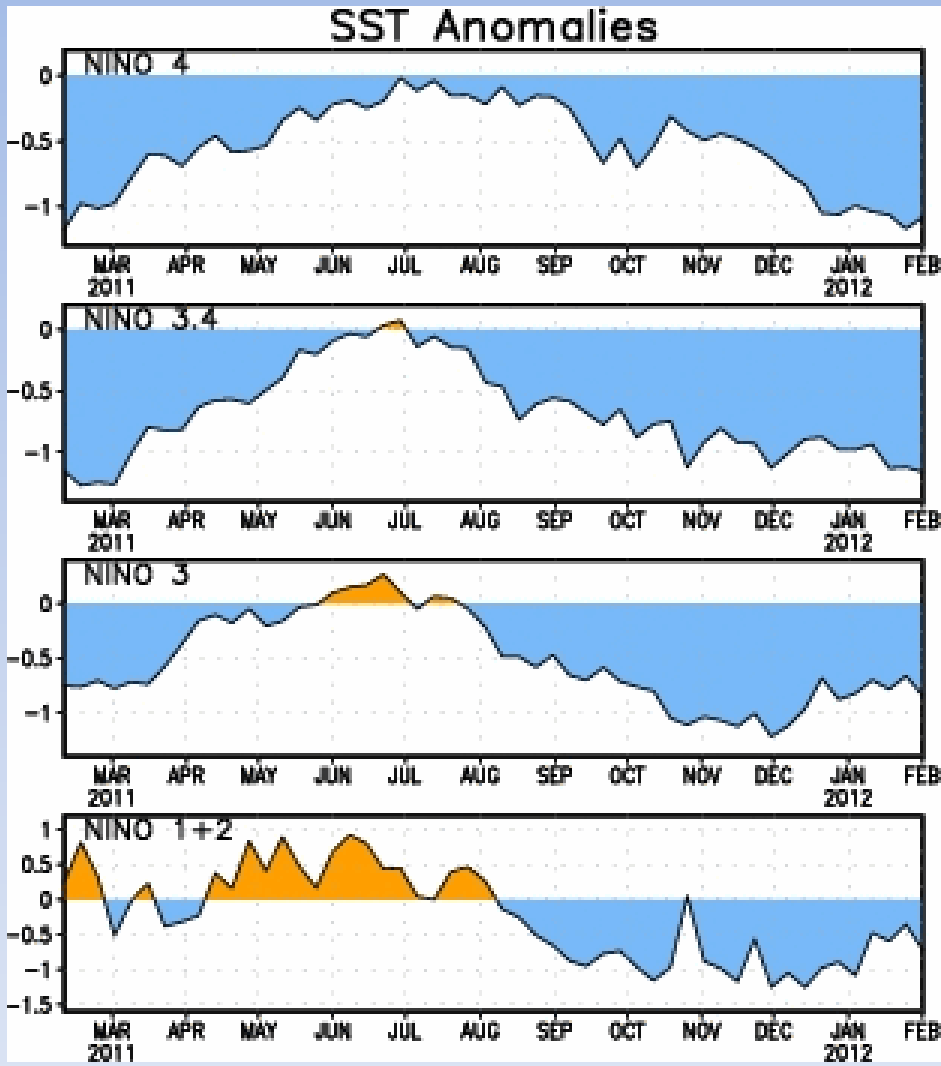
Two-week precipitation probability

This image shows the probability of receiving at least 2 inches (50 mm) of rain during the 2-week period starting on February 7. The ACF has a 30% to 50% probability of getting this much rain.



7-day average Pacific Ocean SST Anomalies

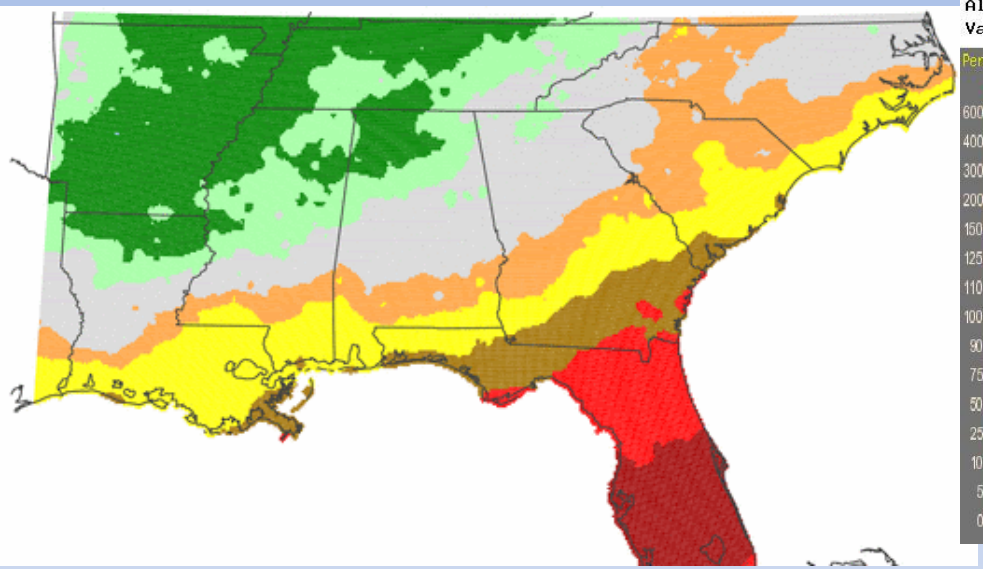


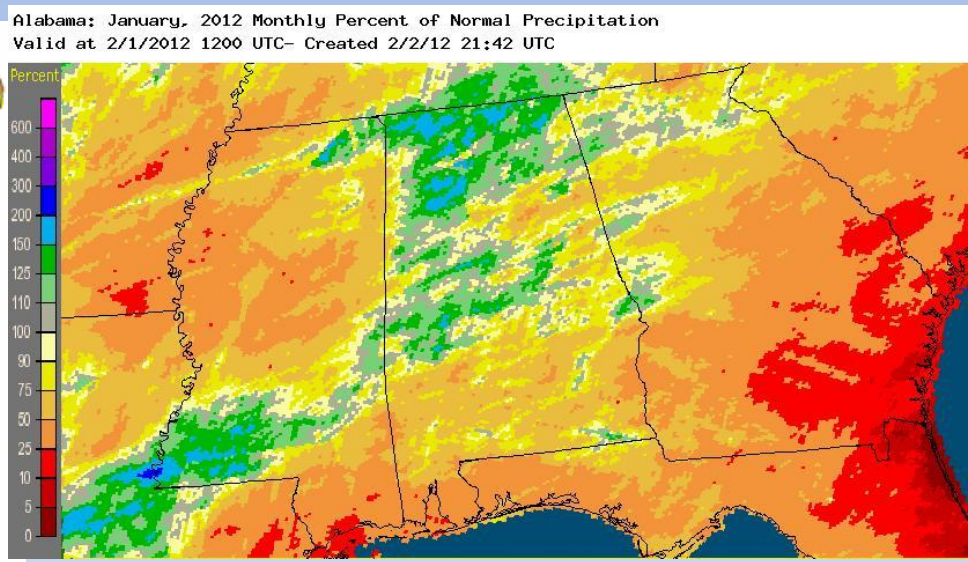


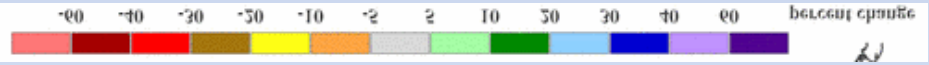
http://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/enso.shtml

La Nina Composites and This year

January



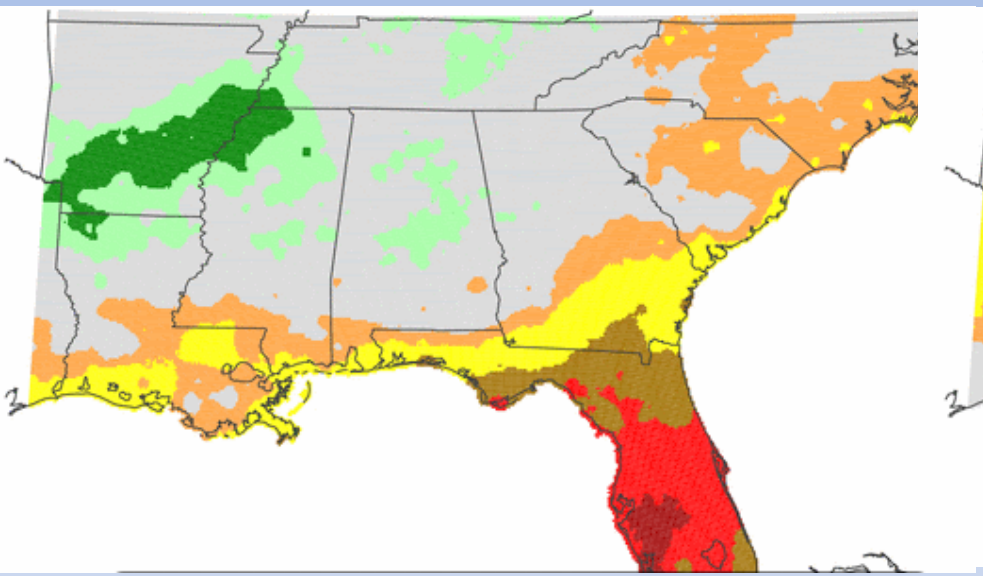


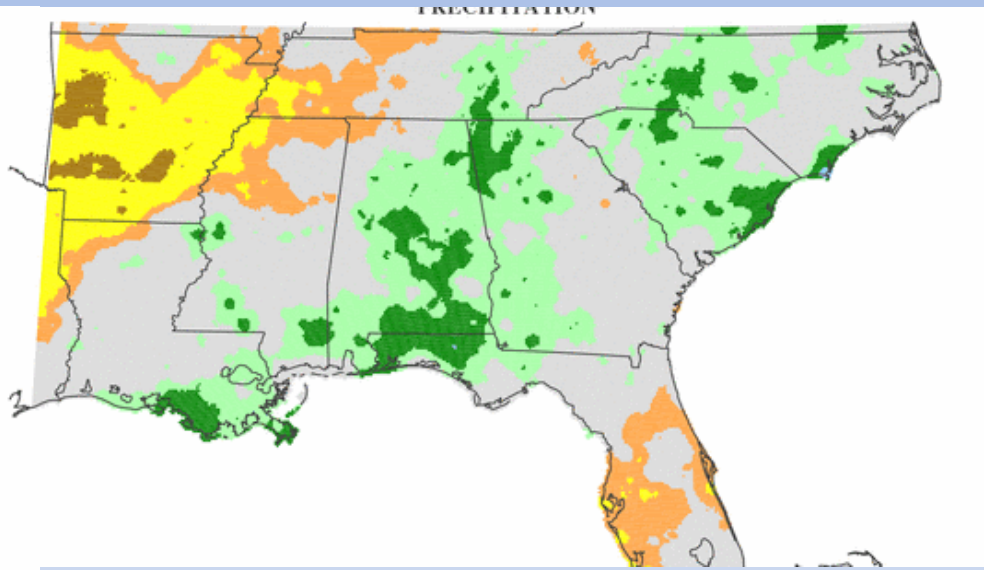


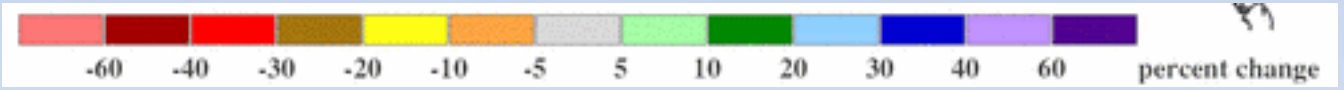
La Nina Composites

March

June

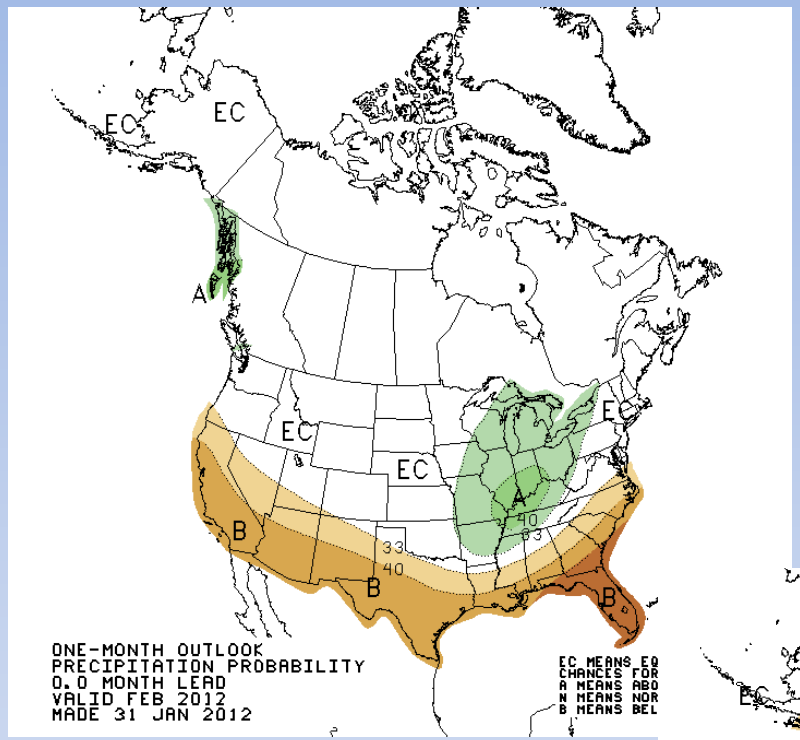




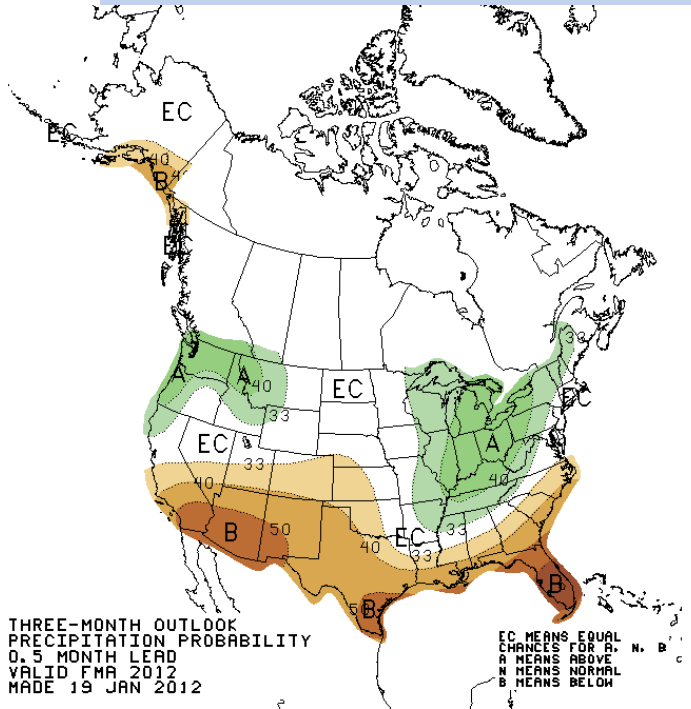


Precipitation Outlook

1-month

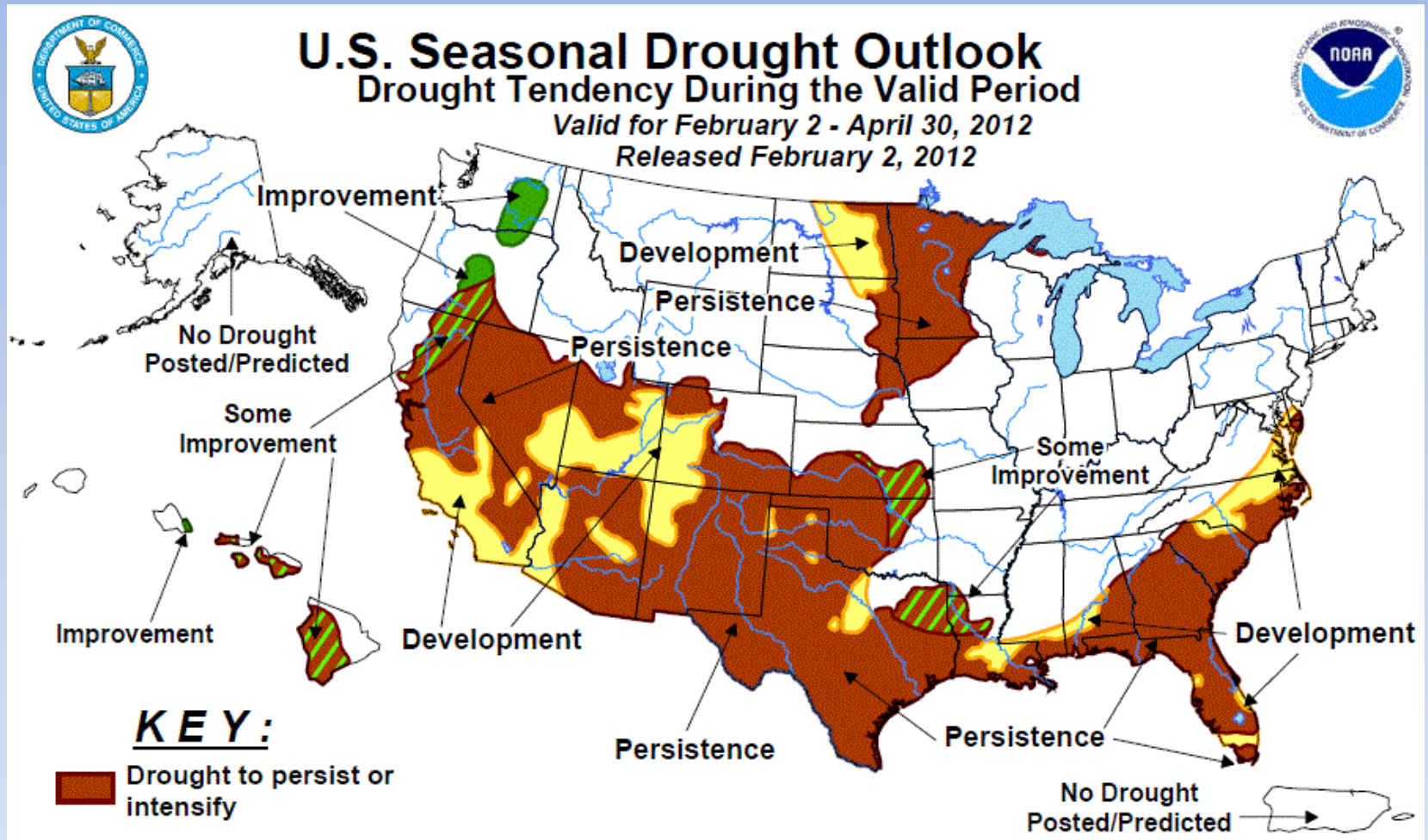


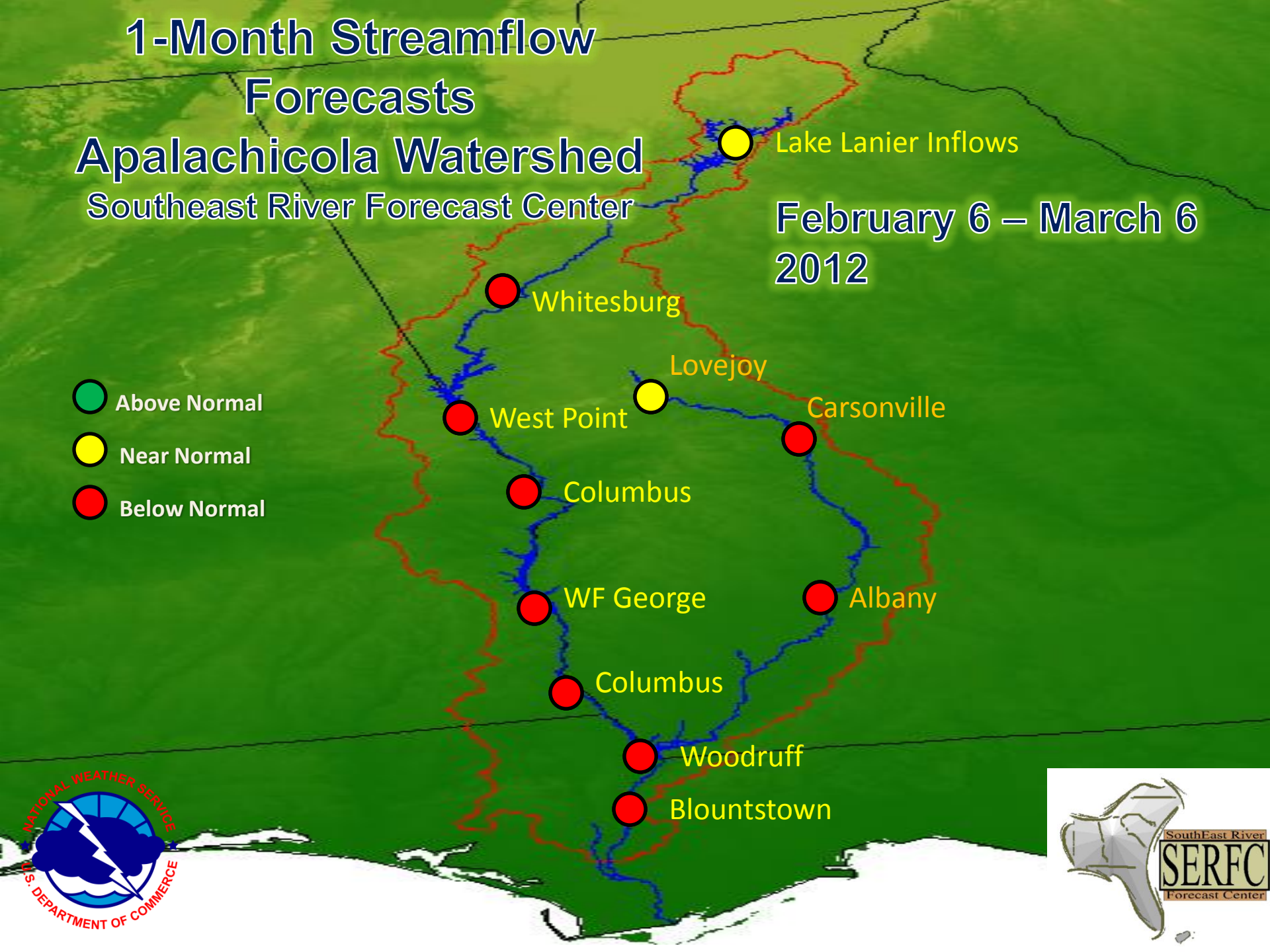
3-month (JFM)



http://www.cpc.ncep.noaa.gov/products/predictions/30d

U.S. Drought Outlook

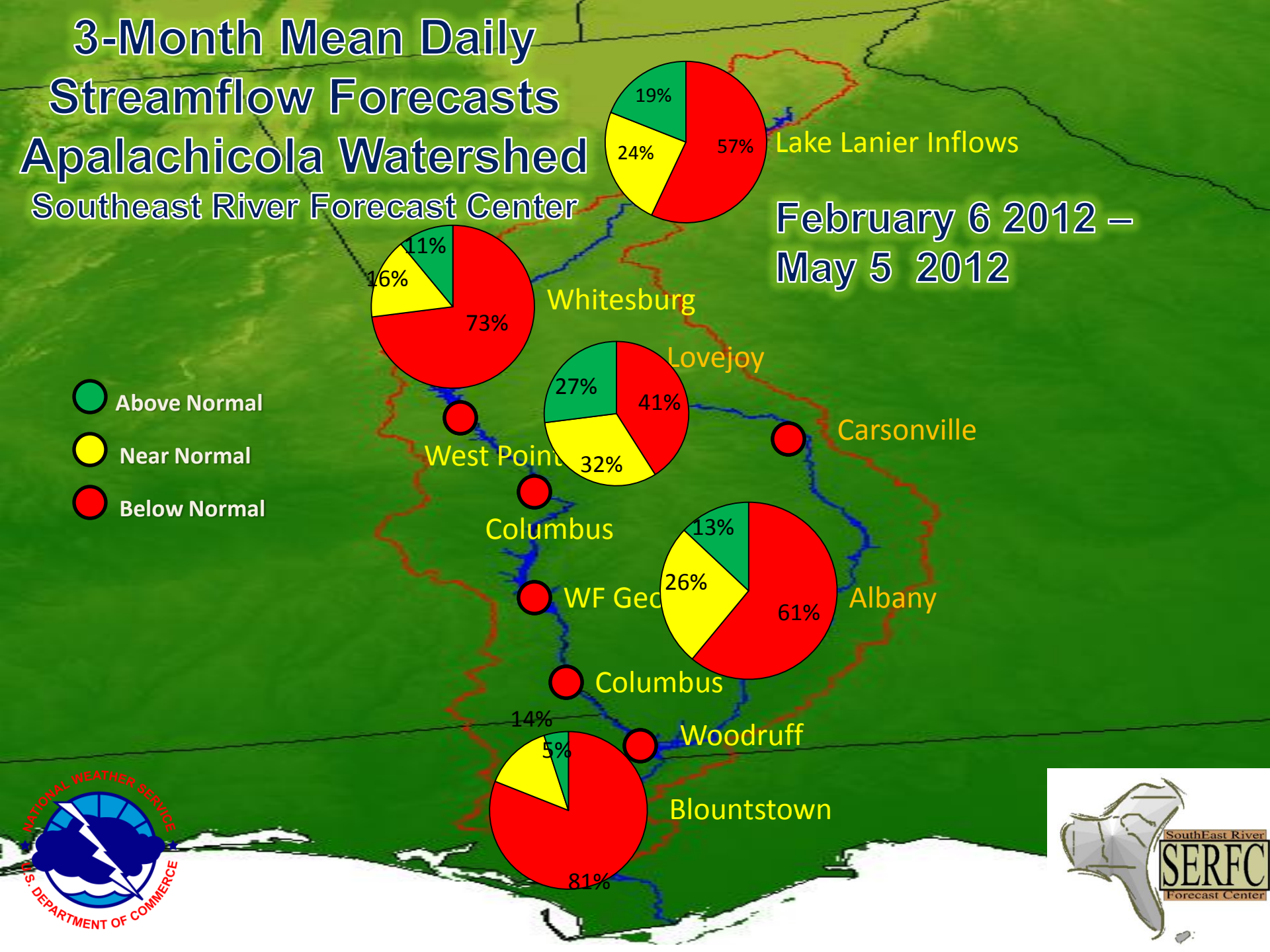



1-Month Streamflow Forecasts
Apalachicola Watershed
Southeast River Forecast Center
February 6 – March 6 2012
Above Normal
Near Normal
Below Normal
Lake Lanier Inflows
Whitesburg
Lovejoy
West Point
Carsonville
Columbus
WF George
Albany
Columbus
Woodruff
Blountstown
NATIONAL WEATHER SERVICE
U.S. DEPARTMENT OF COMMERCE
SouthEast River
SERFC
Forecast Center

3-Month Mean Daily Streamflow Forecasts Apalachicola Watershed

Southeast River Forecast Center

February 6 2012 – May 5 2012

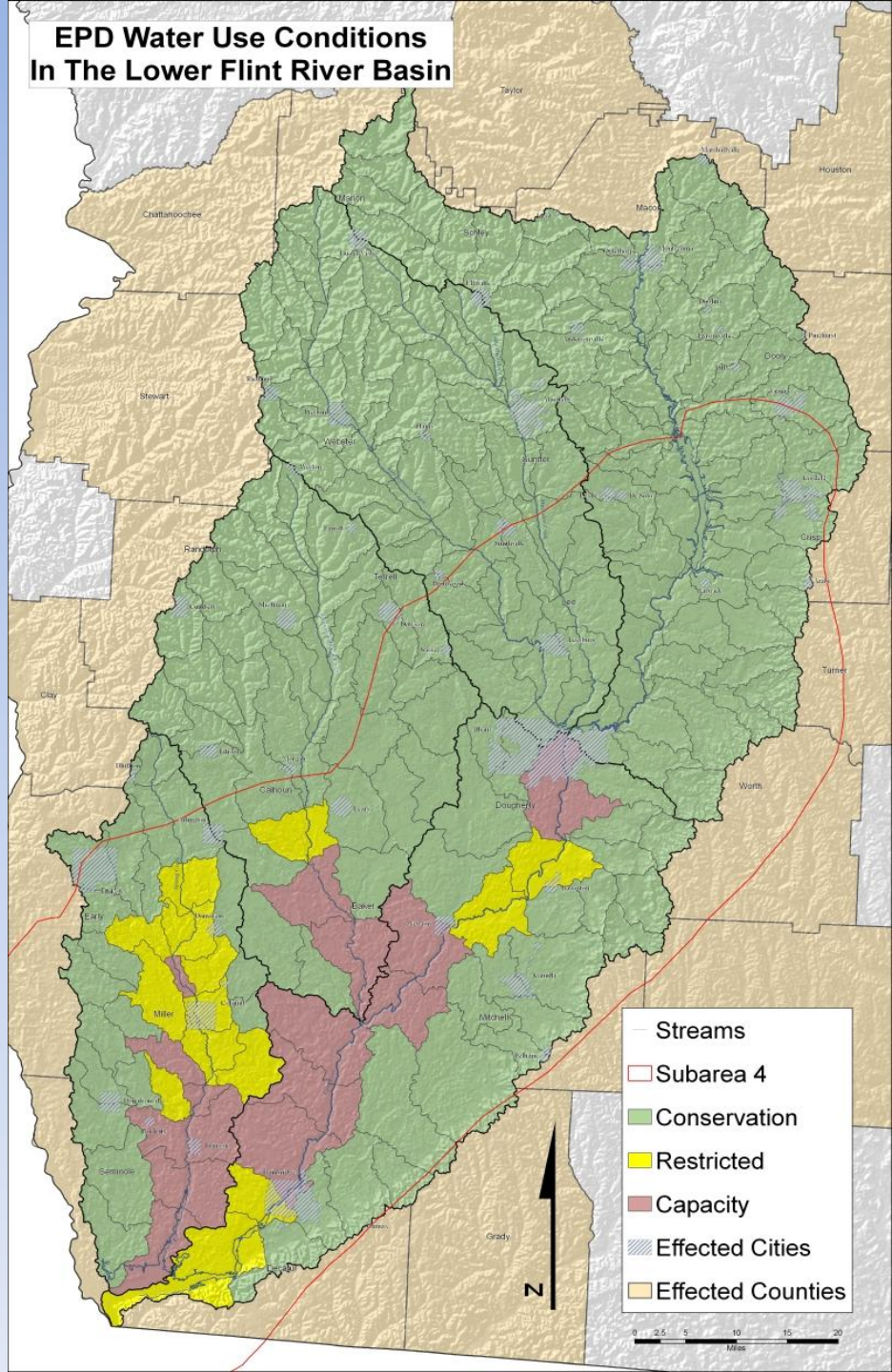


Flint River Drought Protection Act

- Authorizing legislation passed by GA General Assembly in 2000 in response to low flow predictions
- Set up a system where farmers could suspend SW irrigation during a drought in return for a per acre payment (auction)
- A drought must be declared by Director of EPD by March 1 and the auction completed no later than March 22
- Inaugural auction held March 15, 2001
  - 33,101 acres retired from irrigated production
  - Average bid: $136/acre
  - $4.5 million paid to growers
- Auction held again in 2002
  - 40,894 acres retired
  - Average bid: $128/acre
  - $5.2 million paid to growers
- Major changes for Act after Flint River Water Dev. and Conservation Plan passed March 2006

Flint River Drought Protection Act (2006)

- Designation of different “use” areas
- Ground water now eligible for participation
- “Fixed” and metered systems only
- Act may be targeted on smaller watersheds (HUC 8)
- “Partial” buyout of an agricultural permit
- Involuntary suspension provisions remain



Summary

- There has been moderate to full relief from drought in parts of the basin
- There is a very steep gradient from exceptional drought in a band along the middle of the coastal plan, to no drought in the north
- Lake Lanier levels have increased and are projected to increase further, but are likely to remain 6 to 8 feet below conservation targets; other reservoirs are near or above target conservation levels
- Streamflows in the northern part of the basin are near normal and have recovered somewhat in the southern part of the Chattahoochee, but have declined to the lowest 10th percentile in the southern part of the Flint River

Summary

- Ground water levels continue to decline in the southern part of the basin and are at historic lows
- Salinity levels have moderated in Apalachicola Bay but are mostly above the 75th percentile
- While rain is forecast, La Niña conditions persist and the outlook is for drought to continue through the end of April

References

Speakers

David Zierden, FSU

Tony Gotvald, USGS

Jennifer Wanat, FDEP

Robert Allen, US ACE

Jeffry Dobur, SERFC

Mark Masters, FRWPC

Moderator

Keith Ingram, SECC/UF

Additional information

General drought information

http://drought.gov
http://www.drought.unl.edu

General climate and El Niño information

http://agroclimate.org/climate/

Streamflow monitoring

http://waterwatch.usgs.gov

Groundwater monitoring

http://groundwaterwatch.usgs.gov

Scheduled Briefings

28 February

20 March